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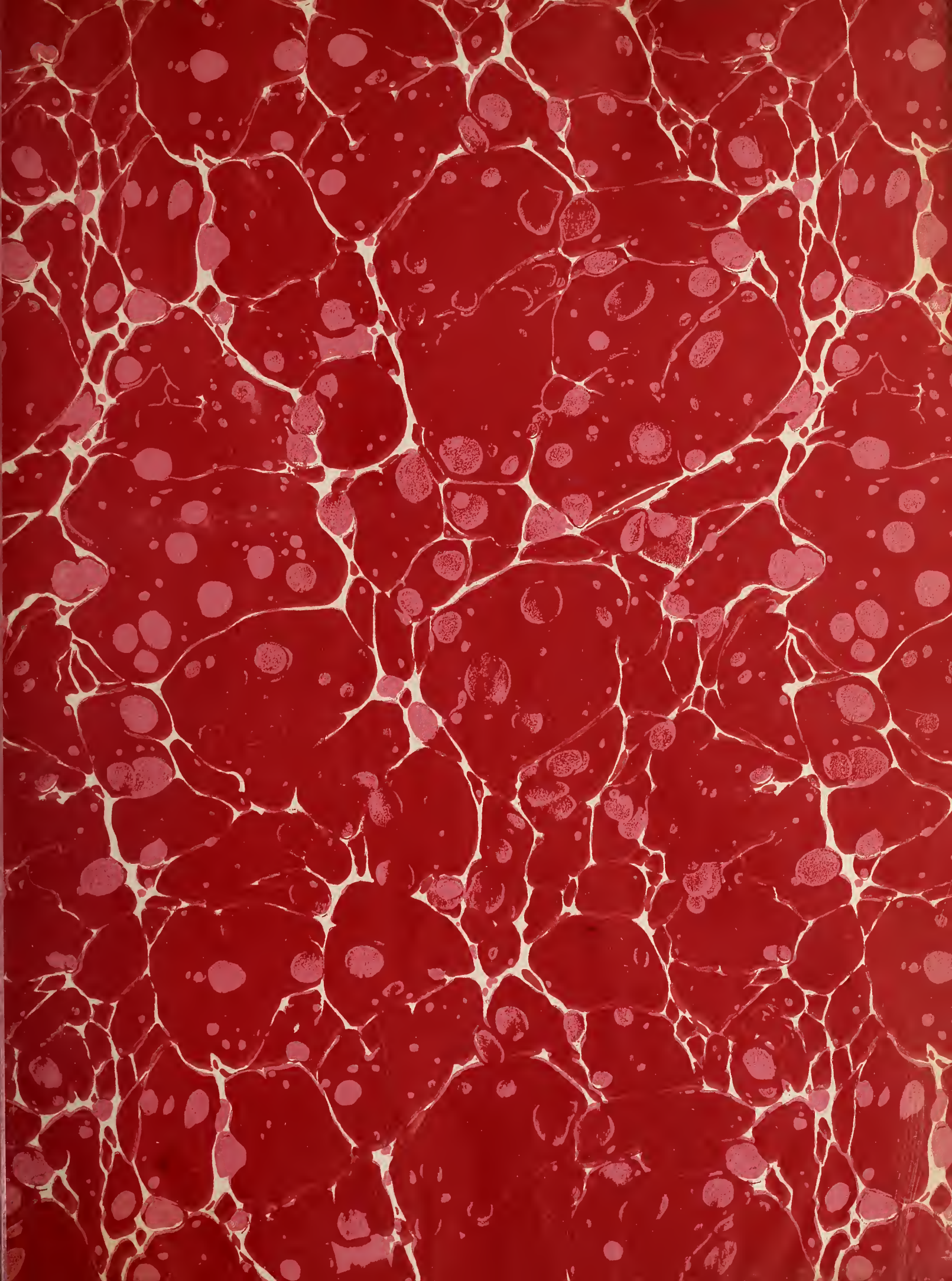
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U. S. DEPT. OF AGRICULTURE

NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

Volume VI.

1914

1914

U. S. DEPT. OF AGRICULTURE
BUREAU OF PLANT INDUSTRY
OFFICE OF CEREAL INVESTIGATIONS

January 13, 1914.

There was no issue of the Newsletter on January 2nd.

MEMORANDUM

Will the field men kindly refer to memorandum contained in the Newsletter of May 10, 1913, regarding the making of separate transportation requests in the name of the Pullman Company when securing sleeping car accommodations.

OFFICE NOTES.

All the field men except J. M. Jenkins, Crowley, La., E. L. Adams, Chico, Calif., and L. R. Breithaupt, Burns, Oregon, are in the Office at present for the preparation of reports of the work done at the field stations during the past year.

Mr. Manley Champlin, of the South Dakota Experiment Station at Brookings, was in the office from December 22nd to 31st, for consultation with the Cerealists regarding future co-operative work to be done in South Dakota.

Mr. C. R. Ball left Washington January 11, for Stillwater, Okla., where he is to deliver three lectures on the grain-sorghums and broomcorn before the pupils in the Winter Short Course at the Agricultural and Mechanical College.

Among the visitors to the Office during the past two weeks were Mr. V. A. Savich, Chief Specialist in Plant Breeding of the Russian Department of Agriculture, Botanical Garden at Tiflis, Russia; Mr. Wm. Krechov, Agricultural College, Nicol-aevo, Saratov Government, Russia; and Mr. J. L. Young, Chinese Commissioner of Agriculture, Republic of China, Peking, China.

Mr. Charles H. Clark, Assistant Agronomist in Charge of Flax Investigations, spent Saturday, December 20, and Monday, December 22, in New York City discussing problems relating to flax seed production and utilization with representatives of the linseed oil industry. Mr. C. T. Nolan of the National Lead Company, one of the members of the committee representing the different associations interested in flax seed production in the United

States, was consulted with regard to the plans of the committee for increasing the interest in this crop throughout the country. Other phases of the industry were discussed with Mr. F.R. Slauson, Assistant General Manager of the American Linseed Company, and with Mr. J. D. Shanahan, Manager of the Spencer-Kellogg Company's linseed mill at New York City. On January 5, Mr. Clark discussed flax work in New York State with Professors H. H. Love, C. H. Myers, and E. G. Montgomery, of Cornell University at Ithaca, New York.

Miss Blanche L. Chadwell resigned from the Office December 27th, to accept a position with the Bureau of Insular Affairs. She will be in the office of Mr. Walter W. Vick, General Receiver of Customs, at Santo Domingo, Dominican Republic.

Miss A. M. Winningham, Clerk, Stenographer and Typewriter, was transferred to this Office from the Forest Service on December 29, 1913.

Office Seminars

The regular seminars of the Office were resumed for the winter of 1913-1914, the first meeting being held on December 9. In the seminars this year, it is planned to give some time to the review of literature. The papers to be reviewed at the meetings will be assigned, but opportunity will be given to any member wishing to review an article not assigned, but which bears directly on the subject. Articles not bearing on the subject under discussion for the day may be reviewed at certain meetings, previous notice of this being given in the announcement of the program.

The program committee for this year is composed of C. E. Leighty, J. A. Clark, and the chairman of the seminar next following, the chairman being taken in order from the alphabetical list of the scientific staff. The committee desires suggestions from the members of the seminar in the making up of the programs, so that they may be of general interest and helpfulness. The desire is to get at the fundamental questions, and to discuss fully the matters of most importance to the office.

At the first meeting, of which Mr. F. R. Babcock was chairman, Mr. C. W. Warburton gave a short talk on the Use of Check Plats for the Correction of Yields, and this was followed by a discussion of Bureau Circular No. 109 and B.P.I. Bulletin No. 239.

The second meeting was held on December 16, Mr. P. V. Cardon being chairman. He discussed the practicability, labor and cost of replication and size of plats. Mr. J. A. Clark gave a review of the methods of replication used by Mr. Salmon at the Belle-fourche Experiment Farm, and data from their respective stations were given by Messrs. N. C. Donaldson and T. R. Stanton.

At the meeting held on January 6, 1914, of which Mr. C. R. Ball was chairman, a general discussion of the subject of grain drills in use at the different stations was held; and at the following seminar, on January 13, there was a general discussion of thrashing machines for plat and nursery thrashing.

THE SIXTH NATIONAL CORN SHOW

The office will be represented as usual with an exhibit at the National Corn Show, which will be held at Dallas, Texas, from February 10 to 24, 1914. Mr. John F. Ross, Superintendent of the Amarillo Cereal Field Station, will install the exhibit, and will demonstrate it during at least a portion of the show.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. Dec. 31. Maximum temperature for the past two weeks was 55 degrees; minimum, 22. Total precipitation for the month of December, 1913, was 2.53 inches.

Jan. 7. Maximum temperature for the week, 45 degrees; minimum, 24. Precipitation for the week, 2.36 inches. Owing to the rather open and mild winter weather that has prevailed to date, winter grains are looking unusually well.

LOUISIANA:

Crowley Rice Experiment Station. Dec. 24. Mr. Jenkins reports that the weather has been very bad for some time and that the ground is so wet that nothing can be done toward planting. During the few clear days thrashing has been done.

KANSAS:

Hays Branch Experiment Station. Jan. 7. Precipitation for the month of December was 3.14 inches, as compared with the normal for 18 years (1896-1913 inc.) of 0.813 of an inch. This rainfall is 1.32 inches greater than the record of December for the same period. There was snow during the holidays, but pleasant weather prevails now.

WYOMING:

Cheyenne Experiment Farm (Archer). Jan. 15. There has been a snowfall of about 18 inches, most of which has remained upon the ground. This is contrary to the usual condition, as the high winds at this time of year generally carry the snow to the lower levels.

SOUTH DAKOTA:

Experiment Station (Brookings). Jan. 9. The weather continues warm, and there are about six inches of snow on the ground. These conditions should be very favorable to winter grain crops.

It is expected to begin a new experiment the coming season, in cooperation with the South Dakota Experiment Station, of a crop mixture, the experiment to be conducted at Brookings and Highmore. There will be two series, one a mixture of barley and oats, sown at the rate of 3 pecks of each to the acre, with check plats of 6 pecks each of barley and oats separately; in the other series oats and emmer will be used in a similar way. Extensive experiments have been conducted with grain mixtures in Ontario, but there are few data from trials within the United States.

NORTH DAKOTA:

Dickinson Substation. Jan. 15. Only a trace of precipitation was recorded in December, and for the past four months there has been less than 2.5 inches. The total precipitation for 1913 was 11.43 inches, compared with the normal of 22 years of 15.46 inches.

IDAHO:

Aberdeen Substation. Jan. 15. Over an inch of rainfall occurred during the last week of December. The temperature has ranged between 6° and -14°.

CALIFORNIA:

Biggs Cereal Field Station. Dec. 17. The weather continues to be unsettled, with occasional small rains and much fog. A few of the farmers are thrashing rice between rains, although there has been very little drying weather. The Sutter Basin Company are harvesting and thrashing, their rice running from 2500 to 5000 pounds per acre. The rice is being hauled directly from the harvested to the thrasher.

Dec. 22. On account of the rainy weather it has been impossible to do a single day's work in the fields since October 31, and the prospects for plowing and preparing land at the present time are anything but encouraging. There has been a precipitation of 1.4 inches during the past twenty-four hours. The frequent showers makes the thrashing of rice almost impossible. A few of the machines are trying to thrash between showers, hauling the rice to them on sleds, but they make very little progress. Some of the farmers have discarded the use of wagons and have adopted sleds for hauling provisions.

Dec. 28. The seasonal rainfall to date is about 3 inches above normal. There have been two floods, the latter, which occurred on Christmas day, covering the entire station to a depth of about 12 inches on the highest points, the water receding on the third day. The water came principally from the overflow of the Cherokee Canal which broke over a number of places about two miles above the station. The water table has been at the surface for six weeks, which together with the frequent rains and floods causes the seeded grain to look anything but promising. There are about 1500 acres of rice still in the shock, and there are no prospects of getting it thrashed soon.

Jan. 1. The third and largest flood of the season, which was accompanied by a severe storm, occurred December 30th, and the entire station is now covered with water varying from 2 to 3 feet in depth. The flood was caused by the overflow of the Cherokee Canal, and all the land in this vicinity east of the canal is under water. The night of the 30th was spent in storing rice and other grains in the hay mow of the barn.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

JAN 30
1914

January 30, 1914.

MEMORANDUM

All communications for the Bureau, especially carbons of transportation requests and memorandum bills of lading, should be transmitted through the Office of Cereal Investigations without fail, as noted heretofore.

OFFICE NOTES

On January 21 Mr. Ball returned from Stillwater, Okla., where he gave three lectures before the Winter Short Course for Farmers at the Agricultural and Mechanical College. The titles of the lectures were "Feterita. Is It a Valuable Crop for Oklahoma?", "Grain Sorghum and Broomcorn Breeding by the U. S. Department of Agriculture" (illustrated), and "Value of the Grain Sorghums in Livestock Feeding." About 700 were enrolled in the Short Course, and about 2,200 were present at the evening session when the illustrated lecture was given. Mr. Ball took two days leave in South Dakota on his return trip to Washington. He reports the weather throughout the Central West exceedingly warm, there being practically no snow in the whole Mississippi Valley region.

Mr. Carleton made a short visit at Cornell University from January 22 to 24, for the purpose of discussing future co-operative plant breeding work.

SEMINARS

Mr. J. A. Clark was chairman of the seminar held on January 20, at which there was a general discussion of C. I. Numbers and the methods of numbering hybrids and selections.

At the seminar of January 27, Mr. C. H. Clark was chairman, and the subject under discussion was flax work. Dr. Humphrey gave a talk on the Diseases of Flax and Methods of Prevention, and Messrs. N. C. Donaldson, J. D. Morrison, and Jenkin W. Jones discussed the flax work at their respective stations, and the status of the crop in their States.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. Jan. 21. During the past two weeks the weather has been generally fair, with no precipitation. Maximum temperature, 53 degrees (Jan. 20); minimum, 8 degrees (Jan. 14). To date all winter grains have apparently escaped injury from freezing.

LOUISIANA:

Crowley Pice Experiment Station. Jan. 17. The weather has been very bad, on account of which no flax could be seeded; and the soil was so wet that it was impossible to put in but half of the oats which it had been expected to seed. Plowing is well under way, however, and, if the weather permits, will be completed next week.

TEXAS:

Amarillo Cereal Field Station. Jan. 27. Fine weather is reported, and plowing is progressing rapidly.

CALIFORNIA:

Biggs Cereal Field Station. Jan. 8. The weather is still unsettled, as it has been since November 1st. During this period there has been a precipitation of 18.25 inches, which is about 8 inches above normal. The large flood, which occurred on New Year day and covered the farm to a depth of from 2 to 3 feet,

washed away many acres of rice. Levees and canal banks were torn down by the water, and irrigating canals and drain ditches were filled up. It will cost about \$200 to repair the damage which was done. The Sutter-Butte canal between Biggs and the river was badly riddled, and the Sutter Basin is now a lake.

The winter grain seeded on the Biggs farm will not be of much value because of the water table being at the surface for the past two months, and the three floods which we have had recently. There are about 350 acres of rice not harvested, which may never be cut, and about 1200 acres standing in the shock, which is in very good condition where well shocked, considering the weather. Practically no land is plowed or prepared for seeding the coming season, and the acreage which will be seeded will depend entirely upon the weather during the next two months and the amount of land that can be watered.

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NEWSLETTER
OF THE
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BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

FEB 13
1914

February 13, 1914

MEMORANDA

The following memorandum was received from Mr. F. E. Meloy, Officer in Charge of Property, on February 9, 1914:

"The following is a list of property turned into the Property Room by offices having no further use for it.

These articles will be transferred to any office applying for same by regular invoice and receipt. It is requested that an inspection be made of articles desired on or before the 14th instant, as any property on hand after that date will be disposed of.

- 2 Rugs, asst-----fair.
- 2 Crock, 1 gal. - "
- 3 Holders, eyeglass-----good.
- 4 Casters, desk-----"
- 7 " , chair-----"
- 1 Can, oil-----fair.
- 2 Coolers, water-- "
- 3 Sections, base-----good.
- 1 " , sliding-----"
- 2 " , tops-----"
- 4 Attachments, card, Remington typewriter-----fair.
- 1 Frame, calendar-----good.
- 1 Box Glasses, cover, microscope-----fair.
- 1 Case, 12 drawers-----good.
- 7 Cameras, asst.
- 7 Lens, camera, asst.
- 15 Shutters, camera, asst.
- 1 Sharpener, pencil-----fair-(Automatic, blades needed).
- 1 Portier-----fair.
- 15 Cases, thermometer, brass-----fair.

Memorandum Regarding Use of Transportation Requests,
Mileage and Scrip.

Paper read by Mr. E. E. Forbes, in charge of Transportation Section, Office of the Assistant Secretary of Agriculture, before a meeting of Special Field Agents, Bureau of Statistics (Agricultural Forecasts), in Washington, D.C., January 30, 1914.

A transportation request is a negotiable paper in lieu of cash, given by the United States Government in exchange for travel accommodations for its various agents. It should be considered by the traveler the same as cash or a certified check, for the reason that if lost anyone finding same could exchange such request for travel accommodations and the Government is pledged for its redemption.

In the use of transportation requests, which the railroads accept in good faith, giving the Government as a rule all the advantages of a cash payment, it is obligatory upon the traveler to comply with all regulations governing such use fully and promptly.

A transportation request should be made out for accommodations with as much care as a check, the Railroad, points of travel, character of travel, and cost of same clearly stated in the spaces provided; also the name of traveler and his signature, which is his receipt in making up and auditing the charge. Any alterations or interlineations should be carefully initialed.

When sleeping or parlor car accommodations are via the Pullman Co's cars, a separate request should be drawn on the Pullman Company for such accommodations; where such accommodations are required over lines operating their own sleeping or parlor cars, the request may cover both travel and sleeping or parlor car accommodations.

A transportation request drawn upon one appropriation should not be used upon another. Much confusion has resulted from such misuse.

Employees are urged to use transportation requests instead of paying cash fares for the reason that where an error occurs a disallowance by the Bureau is necessary and the traveler is subjected to annoyance and delay in getting the matter adjusted: Whereas, when a transportation request has been exchanged, the matter is adjusted with the Railroad Company and the traveler is not pecuniarily involved.

Where a ticket is only partly used or not used at all, when an error has occurred in issuing same, or for any reason where an adjustment with the Railroad Company is necessary, the ticket and a full statement of all the facts thereto should be sent at once to the Chief of the Bureau or Office for the necessary action. Too much importance cannot be attached to the necessity for prompt action in cases of this character. The audit of the traveler's expense account, the monthly account submitted by the Railroad Company, and last and most important the good faith of the Depart-

ment issuing the request are all involved. A ticket not turned in promptly by the traveler often loses its redemption value and it is only by the courtesy of the Railroad Company that a refund can be secured. The Railroad, giving the Government practically a cash rate, is clearly entitled to prompt settlement when the bill is submitted, and holding up a railroad account involving several hundred dollars because of the carelessness of some traveler in not reporting an unused ticket, is something that has frequently embarrassed me in handling the accounts for the Department, and brought forth complaint and vigorous protest from the Railroad.

If each traveler will bear in mind his obligation both to the Government and the Railroad Company, and will remember that the proper handling of these requests saves time, much unnecessary correspondence and delay in settlement, it will greatly simplify the audit and expedite the payment of both the traveler's expense account and the transportation company's bill, and tend to increase the mutual confidence of the Government and the Transportation Companies.

In order that the Bureaus may check up and close out their liabilities for the Fiscal Year, it is highly desirable that all transportation requests in the possession of employees on June 30, of each year be mailed at once to the Chief of Bureau for cancellation.

It is also important in closing out the year's liabilities that all outstanding transportation requests, showing accommodations furnished thereon, should within a reasonable length of time be billed for by the Railroad. In cases where such bills have not been rendered it has been found advisable to notify the Railroad and request such bill. This will save confusion in later years in looking up old accounts, establish a clean "paid-up" record for the office and you will find the Transportation Companies most appreciative.

The Department of Agriculture issues more transportation requests than any other Department of the Government. During the Fiscal Year 1913, 39,000 were issued, exclusive of the Weather Bureau and Forest Service.

The subject of mileage and scrip books should interest the traveling Government employee from both the standpoint of economy and convenience. The contracts under which these books are sold are generally liberal, and should be as strictly lived up to by the traveling public as by the railroads interested.

The territory covered by the railroads of the United States has been divided for convenience into a number of Passenger Associations, for instance: The New England Passenger Association covering the territory embracing the New England States; the Southeastern Passenger Association embracing all of the territory south of the Potomac and Ohio and east of the Mississippi rivers; Central Passenger Association embracing all of the territory north of the Ohio and east of the Mississippi River, and west of Pittsburg, etc. In the New England Passenger Association 500 mile books are sold at \$10. and 1000 mile books at \$20. These books are as a rule transferable, but not interchangeable, being good only over the lines issuing the book. No time limit has been placed upon mileage books sold in the New England Passenger Association territory, and they are, therefore, good until used.

In the Southeastern Passenger Association both mileage and scrip books are sold by the carriers in that territory - 1000 mile books being sold at \$20.00; 2000 mile books at \$40.00, and Penny Scrip Books containing coupons to the value of \$25.00 are sold for \$20.00. No refunds are paid on the covers of any of these books after all of the mileage or scrip in same has been exhausted.

In the territory of the Trans-Continental Scrip Bureau, covering all of the States in the territory of the Great Divide and the Pacific Coast States, scrip books of a different nature are sold. These books contain \$90.00, \$40.00 and \$30.00 worth of scrip, depending upon the specific limitations of the contracts under which they are issued. These books are sold at their face value, for instance: A \$90.00 book is sold for \$90.00, and the traveler instead of paying cash for a ticket presents the scrip book to the local ticket agent, who detaches therefrom scrip to the value of the full cost of the ticket issued. After the book has been exhausted the cover is forwarded to the Trans-Continental Scrip Bureau in San Francisco, Calif., where the proper refunds due on the several trips are calculated, and a check covering same mailed to the proper Bureau official.

It may be of interest to explain how these refunds are arrived at by the Trans-Continental Scrip Bureau, for instance: The railroad fare from San Francisco to Los Angeles, Calif. is \$14.00, a rate of 3 cents per mile being in effect between these points. The Trans-Continental Scrip Bureau will in this case reduce the mileage rate to approximately $2\frac{1}{2}$ cents a mile, thus reducing the cost of the trip to \$11.37 - a difference of \$2.33 being credited to the purchaser of the scrip book. Total reductions on the \$90. scrip books have been known to aggregate as much as \$35.00, thus

saving over $1/3$ of the cost of a \$90. book. It will readily be seen that the amount of refund received on books of this sort varies with the agreement made between the carrier and the Trans-Continental Scrip Bureau. In many instances the mileage is reduced from 3 cents to 2 cents; in other cases it is reduced from 5 cents to $4\frac{1}{2}$ cents.

There are no scrip books on sale in the United States, upon which any specific amount is refunded on a cover. In fact the Trans-Continental Scrip is the only one upon which a cash refund is made.

Interchangeable scrip books containing \$30.00 worth of travel, and good on every railroad in the State are sold in Texas for \$25.00. It will be seen that a specific saving of \$5.00 is made by purchasing these books; the same condition obtains in the Southeastern Passenger Association where books containing \$25.00 worth of scrip are sold at \$20.00.

In many States, notably Wisconsin, Minnesota, Iowa, Missouri, Nebraska, Kansas, Oklahoma and Arkansas, a 2 cent intra-state passenger rate is now in effect, and no saving results from the use of mileage or scrip books for intrastate travel in such territory.

To the casual observer it would appear that the saving by using mileage and scrip is inconsequential. However, when considered in the aggregate the showing for the Department of Agriculture for the fiscal year 1912 is worthy of note, as approximately \$12,000 was saved in the use of these books by employees.

During the fiscal years 1910, 1911 and 1912 there were purchased by the employees of this Department the following mileage and scrip books:

<u>Year</u>	<u>Number of Books</u>	<u>Cost</u>
1910	557	\$20,881.00
1911	789	26,315.50
1912	1756	48,335.00

The data for the fiscal year 1913 is not at hand, but the ratio of increase in number of books purchased and amount paid for same was no doubt maintained.

It may be of interest to know that during the fiscal year 1912 the actual number of miles traveled on mileage books was1,300,923
 Estimated number of miles traveled on scrip books.... 742,461
 Total miles traveled on mileage and scrip books.....2,043,387

Estimated cost of travel if mileage and scrip had not been used.....	\$53,288.71
Net cost of all travel made on mileage and scrip books.....	44,582.61
Amount saved in travel on mileage and scrip.....	\$11,706.10

The use of mileage and scrip books is not recommended for occasional specific trips, but when an employee is traveling continuously in any specific territory there is no reason why he should not avail himself of every possible advantage offered by the railroad companies to reduce the cost of such travel.

Certain Eastern Lines, notably the Penna. R.R., E. & O., and C. & O., and all of the railroads in the Central Passenger Association have on sale interchangeable non-transferable mileage books good over a large number of connecting lines. These books contain 1000 miles, and are sold for \$25.00, with a \$5.00 refund.

After the mileage has been exhausted the traveler should endorse the cover, or proper rebate slip attached thereto, to show clearly that the check covering the amount of the refund should be made payable to the Disbursing Clerk of the Department. These covers, together with the rebate slip, should be immediately mailed to the Bureau in order that the collection may be made from the issuing company or Passenger Association. Considerable delay in collecting these refunds has been experienced in the past through the employee having requested the railroads to make the checks payable to themselves personally. Upon receipt of these checks it then became necessary to forward same to the employee in the field for his endorsement.

When mileage and scrip books have not been completely used before the date of their expiration, they should be immediately forwarded to the Bureau, in order that any refunds due on account of unused portions may be claimed, and placed to the credit of the proper fund. In many cases contracts under which the books are sold state specifically the length of time given for making claim for any refund on account of unused coupons. This time varies considerably, but regardless of the fact that some leeway is given by the railroads the traveler should lose no time in turning in the unused portion of book to the Chief of his Bureau.

Mileage books for travel on government business should invariably be secured in exchange for a government transportation request, and not paid for from the personal funds of the employee.

In making up the monthly statement of mileage or scrip used, the traveler should exercise care in placing the numbers in exact

sequence. For instance: If coupon 295 was the last number detached from a book in the month of May, the first travel in the month of June should show coupon 296 and not coupons 240 or 310 as having been detached. Employees frequently fail to keep a record of previous travel, and this invariably results in confusion in reporting subsequent trips.

In reporting coupons detached from mileage books no attention should be paid to columns under the heading of "Scrip Coupons Detached", while in reporting travel on scrip books the column headed "Mileage Coupons Detached" should be disregarded. When a discrepancy exists between the actual number of miles traveled and the number of mileage coupons detached, the actual number of miles traveled should be shown in the former column. When the two numbers are the same no entry need appear in the column headed "Actual Number of Miles Traveled".

It frequently occurs that field employees are transferred from one territory to another, and have in their possession at the time portions of mileage or scrip which are not good for travel in the new field, but when a situation like this arises the unused portions of tickets should be immediately returned to the bureau, in order that any refunds due on same may be promptly collected, or if the books are transferable the unused portion may be forwarded by the Bureau to some other employee working in the same field.

MEMORANDUM NO. 64.

Amending paragraph 15 of the Fiscal Regulations
in regard to per diem in lieu of subsistence expenses.

Paragraph 15 of the Fiscal Regulations is hereby amended as follows, effective March 1, 1914:

By striking out all of sub-paragraphs (1), (3) and (4) and substituting therefor:

(1) In computing the per diem allowance for fractional parts of a day, the day will be considered as consisting of four equal parts, corresponding to breakfast, dinner, supper, and lodging, and for each such fractional part of the day for which expenses are incurred, one-fourth of the per diem allowance will be granted. In traveling by railroad or ship, when the expense for berth in sleeping car or stateroom is paid by the Government, the per diem allowance will not be reduced by reason thereof.

(3) Letters of authorization may designate certain cities in which unusually high hotel rates prevail, and provide that the per diem rate specified in the letters of authorization shall be increased one dollar per day in each of the cities. In computing the per diem allowance at the higher rate in these cities, the day will be considered as consisting of four equal parts, corresponding to breakfast, dinner, supper, and lodging, and for each such fractional part of the day for which expenses are incurred in these cities, one-fourth of the per diem allowance at the higher rate will be granted.

(4) For days on which an officer or employee is in a camp or other place where meals are furnished by the Government, or on a ship on which the transportation charge includes meals, he may, under authority from the chief of his Bureau, be allowed actual expenses incurred on such days, or a fractional per diem for those parts of the day, during which he was placed at personal expense for meals or lodging.

(Signed) E. T. Galloway,
Acting Secretary.

MEMORANDUM NO. 35.

Shipment of Household Goods and Live Stock Owned by
Employees Transferred from one Station to Another.

General Order No. 145, dated April 25, 1911, as amended by General Order No. 145-A, dated June 1, 1911, is hereby further amended so as to provide that saddle and other animals, not exceeding three head, when used in official work and owned by employees of the Department transferred from one official station to another for permanent duty, may, in addition to 3,500 pounds of household effects and other personal property, be transported at Government expense. The order as amended will read as follows:

"An officer or employee of the Department of Agriculture transferred from one official station to another for permanent duty, in addition to actual traveling expenses provided for in the Fiscal Regulations of the Department, may hereafter, within the discretion and under written instructions of the chief of the bureau, service, or independent division or office in which the officer or employee serves, be allowed freight and drayage charges for the transfer of his household effects, and of other personal property used by such officer or employee when transferred, in official work, not exceeding in all 3,500 pounds in addition to

the weight of live stock: Provided, That saddle and other animals will be transported at Government expense only when used in official work and that the number will in no case exceed three head.

"The Forester may authorize the District Foresters to issue written instructions under which transferred employees may be allowed freight and drayage charges for the transportation of their household effects and other personal property with the same effect as if the instructions had been issued in person by the Forester.

"Shipments under the provisions of the foregoing paragraphs must be made on Departmental bills of lading, and each account must be accompanied by the letter of instructions, and the certificate of the officer best qualified to make it that the property so shipped consists of the household goods of the officer or employee transferred and is exclusively his property, that all other personal property transferred is to be used in official work, and that the transportation was furnished on the occasion of his permanent transfer to a new official station. (Agricultural Appropriation Act, March 4, 1911; Public No. 478.)"

This memorandum supersedes all previous orders issued on this subject.

(Signed) B. T. Galloway,
Acting Secretary.

Memoranda Regarding Books and Periodicals for
Field Use.

The following regulations with regard to the purchase of books and periodicals for field stations are contained in Memorandum No. 62 from the Office of the Secretary, dated January 26, 1914:

First: All requests for the purchase of books and periodicals for field use should be accompanied by a statement giving the location of the field station to which the books are to be assigned. Due consideration should also be given to the library facilities in the vicinity of the field station in order to avoid unwarranted duplication.

Second: All books and periodicals purchased from the funds of the Bureaus, Divisions and Offices for field use shall be considered the property of the Department Library

after return to Washington. All books and periodicals previously purchased and now in the possession of Department employees should be forwarded to the Department Library for recording and stamping.

Third: Books and periodicals purchased from the funds of the Bureaus, Divisions and Offices should be inventoried annually. Records in regard to them should preferably be kept by the librarians of the respective Bureaus. ***** Some discretion, however, should be exercised regarding the types of periodicals of which files should be permanently maintained and inventoried. A considerable number of farm papers, for instance, while necessary for current use, are not, it is believed, of sufficient permanent value to justify preservation and inventory.

Memorandum No. 71 from the Office of the Secretary, dated Feb. 11, 1914, states that paragraph 2 of the foregoing regulations (Memo. No. 62) does not require the return of books and periodicals to Washington for recording, but refers only to books and periodicals purchased from Bureau funds which are already in Washington or which may be returned in future because no longer needed in the field.

Memorandum Regarding Laundry Charges in Travel Accounts.

Memorandum No. 63 from the Office of the Secretary, dated Jan. 28, 1913, quotes a statement from the Auditor for the State and other Departments with reference to Section (o) of Paragraph 9 of the Fiscal Regulations of this Department (obtaining sub-vouchers for laundry charges). It is the opinion of the Auditor that the clause "when practicable" does not allow the omission of such receipts when they can be obtained. In accordance with this opinion "in future receipts will be required in support of all laundry charges, or a written statement must be made showing the impracticability of obtaining receipts."

In this connection, it may be noted that this memorandum applies only to travel accounts on which actual expenses are allowed. On accounts with a fixed per diem allowance, laundry is one of the items included in the per diem.

OFFICE NOTES.

On January 31, Mr. D. F. Stephens returned to the station at Moro, Oregon, having completed his report on the past year's work at that place.

Mr. J. D. Morrison left Washington on January 31, for Brookings, S. Dakota. He stopped en route at Wooster, Ohio, Chicago, Ill., and Minneapolis and St. Paul, Minn., for the purpose of studying milling methods and grade classification of cereals, particularly wheat.

On February 2, Mr. John F. Ross left Washington for Dallas, Texas, where he will install the exhibit of the Bureau of Plant Industry at the National Corn Show, which will be held from February 10 to 24. He will demonstrate the exhibit until February 18 when he will leave for the Cereal Field Station at Amarillo, Texas.

On February 1, Mr. P. V. Cardon, who has been in charge of the rotation and tillage experiments of the office, was transferred to the Office of Acclimatization and Adaptation of Crop Plants; Cotton Breeding, where he will take up work with cotton.

Among the visitors to the office during the past two weeks were Mr. W. C. Etheridge, of the Forage Crops Department of Cornell University, and Mr. Randall Livermore, of the Plant Breeding Department. They were on their way to Dallas, Texas, to install the Cornell exhibit at the National Corn Show. Mr. Etheridge consulted with Mr. Warburton on the future oat work at the University station.

Mr. L. C. Aicher took leave from February 10 to 12, in order to attend the National Potato Convention and the Farmers Short Course at Cornell University. He addressed the Convention and also the New York State Potato Growers Association on the organization and operation of the North Pacific Fruit Distributors and its subsidiary organizations.

SEMINARS.

At the seminar held February 3, of which Mr. A. D. Ellison was chairman, Dr. J. A. LeClerc, of the Bureau of Chemistry, gave a short talk on the chemical data of the Tri-local Soil Exchange and the Crimean and Kubanka wheat environmental experiments. Dr. LeClerc said that the effect of climate on

the chemical composition of wheat far exceeded the effect of the soil. He exhibited samples of wheat and the chemical analyses of all varieties grown at the stations from the years 1907 to 1911.

Mr. N. C. Donaldson was chairman of the seminar held on February 10, at which the environmental experiments were discussed from the agronomic standpoint. Mr. Carleton emphasized the importance of taking complete and careful notes on these experiments. He reviewed some of the data from the stations in the soil exchange experiment showing that in almost every case the wheat grown on Kansas soil was superior to that grown on the other two soils - from Maryland and California. Prof. Schmitz, of the Maryland Agriculture College, gave a short talk on the soil and climate of the various wheat-growing districts of Maryland.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. Feb. 4, Weather for the past two weeks has been generally fair and warm, with a maximum temperature of 74 degrees (Feb. 4), and a minimum of 23 degrees (Jan. 22). Precipitations of 0.66, 0.75 and 0.89 of an inch occurred on January 23, 25 and 31, respectively. Total precipitation for the month of January, 1914, was 4.96 inches.

LOUISIANA:

Crowley Rice Experiment Station. Rec'd Feb. 9. The maximum temperature for the week of January 11 was 74.5 degrees (Jan. 16); minimum, 30 (Jan. 14). Plowing is well underway on the station and will be completed next week if the present good weather continues. Farmers in the vicinity are preparing their land for planting.

KANSAS:

Hays Branch Station. Feb. 11. The abundant rainfall of December has been followed by high winds which have caused considerable drifting of the soil in the large fields on which kafir was grown last year. This has made necessary winter cultivation to stop the blowing, and to date no damage has resulted on the cereal projects.

WYOMING:

Cheyenne Experiment Farm (Archer). Feb. 11. Weather during the past two weeks has been extremely cold, the minimum temperature recorded to date being -26 degrees. There has been a great deal of wind but no more snow.

The State Farm Board has purchased 10 cows for the farm, and these will be fed the ensilage which was made last summer. All stock is in good condition.

IDAHO:

Aberdeen Substation. Feb. 7. Weather has been very cold, a minimum temperature of -15 degrees being registered on February 5. There has been a great deal of snow, and this has drifted so badly that the roads are in very bad condition.

CALIFORNIA:

Biggs Cereal Field Station. Jan. 24. Station Farm. The rains still continue, and since the last report two more floods have occurred, making a total of six. The rainfall is now nearly 23 inches.

Sacramento Valley Farms. The Sutter Basin Company lost a portion of their rice in the recent flood, about 4000 sacks being washed away. Sixty acres were unharvested. If the water recedes they will plant a large acreage this spring.

CORRECTION

In the Newsletter of January 30, under "CALIFORNIA" the following sentence appeared: "The large flood, which occurred on New Year day and covered the farm to a depth of from 2 to 3 feet, washed away many acres of rice." This gives the impression that this occurred on the station, but although the flood passed over the station, the "acres of rice" washed away were from the farms in the valley.

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MA 7-1-1917

NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

FEB 27
1914

February 27, 1914.

MEMORANDUM

Recent changes in the manner of handling the Department inventory make it important that the loss of any inventoriable article be reported at once, and also what steps have been taken to find the article lost. If such explanation is given promptly much trouble will be avoided. The Department Board of Awards under these conditions may authorize the removal of the item from the Office inventory instead of requiring it to be replaced.

OFFICE NOTES

Mr. Carleton attended the conference of the Flax Development Committee on Tuesday, February 17, at the Blackstone Hotel, Chicago. This committee represents associations of linseed oil, paint and varnish manufacturers. The conference was held for the purpose of discussing Departmental experiments looking to the future increase of the flaxseed crop.

On February 20, Messrs. Jenkin W. Jones and Louis Wermelskirchen returned to their respective stations at Archer, Wyoming and Amarillo, Texas, having finished the reports upon their past year's work at these places.

Mr. L. C. Aicher left Washington on February 24 for the experiment station at Aberdeen, Idaho. He will stop en route, taking annual leave at Manhattan, Kansas, and visiting the Experiment Station at Ft. Collins, Colo., to consult with its officials concerning cereal experiments.

Mr. Geo. A. McMurdo returned to the Akron Field Station (Colorado) on February 25, having completed his report upon the cereal work done at that station during the past year.

Charles M. Shryock was appointed as Messenger on February 11, in the place of Curtis D. Daughton, who resigned January 20.

SEMINAR

The seminars of February 17 and 24 were held in the cereal disease laboratory, with Messrs. John H. Parker and A. A. Potter, respectively, as chairmen. At the former, Mr. Potter gave a short summary of the work which the Office has done with the smuts of sorghum, including some interesting results obtained with different chemical treatments of seed and soil at the various field stations. Dr. Humphrey gave a talk on the stinking smut of wheat, and spoke of its life history, especially of peculiar conditions in the Palouse country. Methods of control were also given.

On February 24, Dr. Humphrey continued his talk of the previous seminar on the smuts of small grains, and gave the descriptions of the two different smuts which occur on oats, of the loose smuts of wheat and barley, and of the covered smut of barley, including the methods of treatment for all of these. He also discussed the diseases of cereals caused by "imperfect fungi" and known as scabs, wilts, soil diseases, leaf blights, etc. Mr. Potter spoke of the hot water and hot air treatment of seed grain to prevent smut. He also gave a review of German work along this line, together with results of the experiments of this Office.

FIELD NOTES.

VIRGINIA:

Arlington Experiment Farm. Feb. 25. Weather during the past two weeks has been very cold, with high winds and snow. Maximum temperature for the past three weeks, 51 degrees (Feb. 7); minimum, -3 degrees (Feb. 25). Precipitation for this period was 2.47 inches, of which 1.18 inches was in the form of snow.

LOUISIANA:

Crowley Rice Experiment Station. Feb. 16. For the past month good weather has prevailed. All the land on the station farm has been plowed. The farmers have taken

advantage of the good weather and a number have finished plowing and are disking. There are known to be five traction engines in use in preparing land within a short distance of Crowley.

SOUTH DAKOTA:

Highmore Substation. Feb. 24. Weather conditions during the past week have been very severe, a minimum temperature of -28 degrees being registered on the 21st. A blizzard occurred on the 22d, which with the low temperature caused much suffering among the live stock in this vicinity, no losses being reported, however. It is not believed that the severe cold will greatly harm the winter grains, as they are covered with snow from six to twenty inches in depth.

CALIFORNIA:

Biggs Cereal Field Station. Feb. 10. (Sacramento Valley) The nice weather which has prevailed during the past two weeks is giving the grain farmers a chance to seed their wheat and barley. A large acreage of barley will be seeded this year, and prospects for a good crop year are unusually good at present.

Feb. 16. (Station) The clear weather of the past three weeks has dried out the ground considerably, but not enough to enable the working of the adobe land. If the good weather continues it will be possible to start field work in about a week. As it has not been possible to do anything in the field since October there will be a great deal of work to be done this spring.

(Sacramento Valley) Practically all the rice land that can be prepared and watered will be seeded to rice this spring. At present there is a strong demand for rice land, and from the present indications about 14,000 acres will be sown to this crop in the State this year.

Mr. Adams was the guest of the Willows Chamber of Commerce this month. He gave an address before an audience of about 250 people, the majority of whom were interested in the culture of rice on the "goose lands."

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

MAR 13
1914

March 13, 1914.

MEMORANDUM

In the interests of simplicity of varietal names, it has been agreed to drop the possessive sign from such names as Power's Fife, Wellman's Fife, Haynes' Bluestem, Pringle's Progress, Boehme's Hooded, etc. These should in the future be written Power Fife, Wellman Fife, Haynes Bluestem, Pringle Progress, Boehme Hooded, etc. Similar names should be written in the same manner.

OFFICE NOTES

On February 28 Mr. N. C. Donaldson returned to the Judith Basin Substation at Moccasin, Montana. He stopped for a few days in Bozeman for the purpose of consulting the experiment station officials there with regard to the future work at the substation.

Mr. F. A. Kiene, jr., left Washington on February 28, for the Hays Branch Station, at Hays, Kansas. He made a short stop at Manhattan in order to discuss the work of the coming season with the station officials there.

Mr. Charles E. Chambliss left March 1 on an inspection trip to the rice farms at Crowley, Louisiana, and Beaumont, Texas.

On March 3 Mr. A. D. Ellison returned to the Nephi Substation, Nephi, Utah. He stopped en route at Amarillo, Texas, to visit the Cereal Field Station there, and at Logan, Utah, where he will consult with station officials and do some laboratory work.

Dr. C. E. Leighty left March 7 for Cornell University, to consult with experiment station officials regarding future experiments, and to gather data for publication.

Miss A. M. Winningham was transferred to the Treasury Department on March 1.

SEMINAR

On March 3 the last seminar of the season was held at the cereal disease laboratory, with Dr. H. B. Humphrey as chairman. Mr. F. J. Pritchard, of the Office of Cotton and Truck Disease and Sugar Plant Investigations, spoke on his experimental work with rusts while at the North Dakota station, with particular reference to the rusted seed problem. He stated that neither the barberries, wind blown spores from the South nor spores from wild grasses, would explain the annual outbreaks of rust in North Dakota. Evidence was given showing that spore pustules were often found at the tips of wheat kernels grown in a rust year. This may prove to be the common method of wintering over of the rust.

Mr. J. H. Parker then gave brief descriptions and life histories of the common cereal rusts. An outline of the work that has been done at the Minnesota station in breeding for rust resistance was also given.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. March 11. Weather during the past two weeks has continued cold and stormy, with a maximum temperature of 50 degrees (Feb. 27), and a minimum of 10 degrees (Feb. 23). Total precipitation for this period was 0.75 inch, all of which occurred in the form of snow.

LOUISIANA:

Crowley Rice Experiment Station. February 28. Maximum temperature for the past week was 72 degrees (Feb. 22); minimum 27 (Feb. 26). Total precipitation has been 1.35 inches, of which .81 of an inch came in the form of snow. Sleet and rain began to fall about noon of the 24th, the rain freezing as it fell, and this continued until about midnight when it began to snow. Everything was incased in

ice about $3/4$ inch thick. This snow, which was the first since 1899, was about 2 inches deep on the level and there was no drifting.

WYOMING:

Cheyenne Experiment Farm (Archer). February 23. The weather is quite cold and the ground partly covered with snow. The appearance of the winter wheat is very good and there does not seem to have been any winter killing up to the present time.

SOUTH DAKOTA:

Highmore Substation. March 3. Snow is melting rapidly and will give enough moisture to start the early plantings. In the cornstalks over a foot of snow is still left, and it is believed this additional moisture will be valuable in making this season's crop.

CALIFORNIA:

Biggs Cereal Field Station. February 21. (Station) After having three weeks of clear weather the rain began again on February 17 and has continued to date. Since the 17th, 4.75 inches of rain have fallen, making a total seasonal precipitation of 30.80 inches. There is considerable repairing to be done on the ditches, levees and drains as a result of the floods. It will be impossible to start field work before March 15.

March 1. Weather is clear again, and from present indications should remain so. To date there have been about 33 inches of precipitation, which is the highest amount recorded to March 1 during a period of 43 years. The ground is still very wet and cannot be worked for at least two weeks even though the clear weather continues.

(Sacramento Valley) March 1. Practically nothing has been accomplished in the fields since last October, almost all of the thrashing machines having been idle since that time.

Rice is in very good condition where well shocked. Most farmers will be late seeding this spring, many having to thrash before the land can be prepared.

OREGON:

Eastern Oregon Dry-Farming Substation. February 20. The winter has been generally mild and the snow melted some time ago, the weather having been warm enough to start the grass growing. Ten degrees above zero was the lowest temperature recorded during the winter. The autumn and winter precipitation was favorable for crop growth, the total from September 1 to January 31 being 7.67 inches, about 2 inches more than for the same period the preceding year. Unlike the winter season of 1912-1913, the run-off this season has been very slight. Winter grains are in excellent condition, and if weather continues favorable, even the winter oats will come through with good stands.

Harney Branch Station (Burns). March 3. The winter has been unusually mild, the ground having never been frozen much more than 4 inches, whereas it usually freezes to a depth of from 2 to 3 feet. Snow to the depth of about a foot has covered the valley since the last of December. Though this is now melting quite rapidly it is mostly going into the ground. Fall plowing has never been frozen as much as the unplowed land, and is consequently taking up more of the snow water.

The second Harney County Short Course was held from February 16 to 21, inclusive. For this work, two professors in Agriculture and two in Domestic Science came from the Oregon Agricultural College. They were assisted by the local High School instructors in these subjects and by the superintendent and assistant superintendent of the experiment station. A very good course was given for the time taken. About two hundred men and more than two women were in attendance, these people coming on horseback and in wagons from distances as great as fifty or one hundred miles.

1917

NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

MAR 27
1914

March 27, 1914.

MEMORANDUM

Beginning with April 1, the Newsletter will be issued weekly. All field men are urged to send in items so that they will reach the office not later than Thursday of each week.

OFFICE NOTES

On March 16 Mr. Carleton returned from Beaumont, Texas, where he had been to discuss the subject of future cooperation on the Beaumont Rice Farm with the Texas station officials. Mr. E. M. Johnston, late superintendent of the farm, will leave Beaumont to reach Bellefourche, S. Dak., by the first of April, where he will have charge of the cereal work. Mr. Hilmer H. Laude, formerly of the Kansas station, will take over the superintendency of the Beaumont farm on April 1.

Messrs. J. A. Clark and F. R. Babcock left Washington on March 21 for their respective stations at Dickinson and Williston, N. Dakota. They will stop at Fargo to consult with the state Agricultural Experiment Station officials relative to the future cooperative cereal work at their stations.

Mr. Warburton gave a talk on Oat Culture at the Northern Virginia Farmers' Institute held at Manassas, Va., on March 27.

Dr. C. E. Leighty returned on March 26 from Ithaca, N. Y., where he had been for three weeks in consultation with station officials and collaborating in preparing for publication the results of some of the cooperative work.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. March 25. Maximum temperature for the past two weeks, 74 degrees (March 13); minimum, 10 degrees (March 21). Precipitation for this period has been 0.88 of an inch, of which 0.39 occurred in the form of snow. Winter grains are slowly recovering from the late severe cold, and apparently little winterkilling has occurred. A small plat of flax which was being grown as a fall-seeded crop has completely winterkilled. Prior to the severe weather which has been almost continuous since the first week in February, the plants remained green and gave every evidence of surviving the winter.

TEXAS:

Amarillo Cereal Field Station. March 14. Spring work is progressing rapidly. All oats and wheats, except the date-of-seeding and the D. L. A. plats, have been seeded. Nursery seeding is in progress. The top three inches of soil is quite dry, but there seems to be sufficient moisture below to bring up the grain in good condition.

KANSAS:

Hays Branch Station. March 14. The winter has been mild, with very little snow, and since March 9, warm, pleasant, weather has prevailed. Much winter cultivation has been necessary because of soil blowing. There has been no loss from winterkilling of the winter wheats in the varietal plats. The late plats in the rate- and date-of-seeding tests show considerable damage. Winter Galgalos, C. I. No. 2398, and Winter Emmer are apparently uninjured. All seed-bed preparation has been completed and seeding of the spring grains will start on March 13. A seeding of oats and barley made in January emerged March 14.

March 21. Maximum temperature for the past week, 78 degrees (March 14); minimum, 6 degrees (March 26): average

maximum, 32.1 degrees; average minimum, 27 degrees. Practically no precipitation occurred during the winter. One snow of three inches was blown from the wheat fields, lodging in the listed and stubble land. Rain is needed to solidify the soil disintegrated through wintering. Considerable damage has been done on the station by the blowing of the soil, the area devoted to cereal work suffering less than any other. After the warm weather of the first of the month, on March 18 cold weather and high winds began again. The spring grain area, while in too fine condition, held fairly well. A fallowed area, which is to be used for the spring grain nursery, began to move and did slight damage to five plats of winter barley before being brought under control. On March 16 and 17, 12 varieties of spring barley, 10 of oats and 10 of wheat were seeded, and the first sowing of Burt oats in the rate and date tests was made. Culberson winter oats show a 50% winter survival, while fall-sown Burt oats killed out entirely.

COLORADO:

Akron Field Station. March 17. Weather during the past two weeks has been very mild, and winter grains have made some growth. Indications are that winter survival will be high for all fall plantings in field plats, except that of Tennessee Winter Barley. In the nursery the oats seem to have entirely winterkilled. Seeding of spring wheat on the rotations was begun March 17, and the varietal plats will be sown the latter part of the week if weather conditions are favorable. The soil is in excellent condition.

WYOMING:

Cheyenne Experiment Farm (Archer). March 23. During the past week the velocity of the wind has been high causing considerable soil shifting. Very little, if any, winterkilling has occurred among the fall-sown crops.

OREGON:

Eastern Oregon Dry-Farming Substation (Moro).

March 20. Warm weather has prevailed during the past two weeks, which has made it necessary to harrow all winter grains to break the crust which has formed. Field pea, oat and barley varieties have been seeded, and with favorable weather conditions all varietal seeding will be completed by the end of March. All winter grains are in excellent condition. Some improvement work, including concrete watering trough, walks, and some repainting, has been completed.

Mr. Stephens, superintendent of the farm, visited Corvallis from March 9 to 13, conferring with station officials relative to future work at Moro. Dr. Withycombe, Director of the Oregon Agricultural Experiment Station, inspected the substation during the week of March 15.

CORRECTION

Correcting statement in Newsletter of March 13:

More than two hundred women attended the second Harney County Short Course held at the Harney Branch Station, Burns, Oregon, from February 16 to 21, incl.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

APR 3
1914

April 3, 1914.

OFFICE NOTES

Mr. Parker left Washington on March 31, for St. Paul, Minn., where he will start the preparations for the spring seeding in connection with the cereal disease work at that station. He stopped en route at Cleveland, Ohio, Chicago, Illinois, and Ames, Iowa, to confer with seedsmen, and experiment station officials.

On April 1, Mr. Warburton left for Ames, Iowa, to plan the year's work in oat breeding in cooperation with Mr. L. C. Burnett and other officials of the Iowa Experiment Station, and to assist in the seeding of the extensive oat nursery.

Mr. H. V. Harlan, in charge of the barley investigations of this Office, returned on April 2, from Peru, where he had been for the past six months. As stated in the Newsletter of October 3, 1913, Mr. Harlan made this trip for the purpose of undertaking some agricultural investigations for the Peruvian Corporation on the Titicaca highlands in southern Peru.

Mr. Chambliss returned on April 3 from Crowley, La., where he spent three weeks in studying rices grown in the nursery during the season of 1913.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. April 1, The wet and rather unseasonal weather of the past week has delayed field work. The inclement weather has also delayed early spring

planting upon the farms in adjoining localities in Virginia and Maryland. However, it is hoped that loss by late planting will be partly compensated for by the elimination of danger of injury by late frosts.

IOWA:

Experiment Station (Ames). March 25. The season is progressing very rapidly, and teams are in the field in many places. Indications are that the warm weather will be followed by a drop in temperature with either rain or snow. High winds have prevailed for two days, and are now blowing from the Northwest. Frost is not yet entirely out of the ground, and it is not thought advisable to plant until after a rain. The seeding of oats will not begin before April 1.

SOUTH DAKOTA:

Experiment Station (Brookings). March 24. Spring is opening rather early and tillage operations have been begun at all the experiment farms except Brookings, where it is expected to start them March 24.

UTAH:

Nephi Substation. March 28. Weather at present is cold, but for the past three weeks has been very favorable to plant growth, and during that time the winter grains which emerged and obtained a good start last fall commenced growing and are now in good condition. The crops which were planted during the latter part of October and first of November emerged sometime during November, as the month was quite warm and the soil in good condition.

During February and the first part of March the ground was apparently not frozen very hard, and absorbed a large part of the melting snow and frequent rains, as surface indications are that little run-off occurred. The surface soil is now baked to some extent and quite dry.

The property which was stolen from the station on April 17, 1913, and soon after came into the possession of the Court of the Fifth Judicial District, was released and returned in good condition on March 26, 1914.

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NEWSLETTER

OF THE

OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,

U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

APR 10

1914

April 10, 1914.

NOTICE TO FIELD MEN.

We have recently received complaints from the field men that the contents of packages sent them from this Office have arrived in damaged condition, and that sometimes portions thereof are missing. It is the aim of the Office to have packages so prepared for the field that they will be received in good condition. As an aid in maintaining good service in this respect we request that each man report all packages received in bad condition, indicating the nature and probable cause of the damage.

OFFICE NOTES.

Inquiry has been made regarding the treatment of flax seed for wilt preparatory to sowing. The following is recommended by Dr. Humphrey:

First - Carefully clean the seed in order to remove all immature grains.

Second - Place this cleaned grain on a tight floor and apply by means of a sprayer with a finely perforated nozzle a solution of 1-40 formalin, at the rate of 1/2 gallon of the solution for every bushel of seed.

Third - While the solution is being applied the grain should be thoroughly stirred by means of a shovel or other implement.

It has been found by actual practice that the application of 1/2 gallon to a bushel of seed is sufficient to moisten the entire surface of each grain without causing the mass of seed to mat. The formalin solution should be allowed to act from 10 minutes to 1/2 hour before the seed is planted.

Dr. Leighty and Mr. Ball are sending out for planting in nursery tests about 400 wheats, covered by C.I. Nos. 3713 - 4140, incl. These comprise about 100 samples from Russia, including Turkestan and Siberia;

and the major part of 300 samples which were exhibited in 1910 at L'institut Colonial Marseillais. It is not known definitely in many cases whether these are spring or winter varieties.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. April 8. Maximum temperature for the past two weeks, 75 degrees (March 27); minimum, 28 (April 6). Total precipitation during this period was 1.57 inches. Winter wheat has made very rapid growth during the past few weeks, and appears unusually promising.

TEXAS:

Amarillo Experiment Farm. March 28. There has been little precipitation since the first of the year and the surface of the ground is very dry to a depth of 3 or 4 inches. There seems to be plenty of moisture in the subsoil and with a little rain to moisten the surface all kinds of crops should make rapid growth. Some damage has been done during the winter by jack-rabbits, and some by blowing. During March, two very bad wind and dust storms occurred. The soil on the station farm was in such condition that it blew very little, but much damage was done in a large surrounding area, some wheat fields being entirely blown out.

Nearly all winter wheats are in very good condition. The emmers and spelt seem to have suffered most during the winter, being now killed to the ground, but there is still life in the crown and roots and it is believed that if rain occurs soon they will make a crop. Tennessee Winter Barley was also killed to the ground but it is coming up again in fairly good condition. All small grain planted during the first week of March is coming up well, and it is believed that a perfect stand will be had on every plat.

April 4. Maximum temperature during the past week was 78 degrees; minimum, 32. A precipitation of .22 of an inch occurred during the week, coming in three light showers, which will doubtless aid the growth of the winter wheats. The days have been cloudy for the most part, and no high winds have occurred.

Some harrowing was done on April 1 in the cultivation plats of wheat. Nursery plantings were completed on March 25. Notes taken on the survival of winter wheats show that in the head-rows Turkey, C.I. No. 2223, and Kharkov, C.I. No. 2208, have splendid stands.

Mr. John S. Cole, of the Office of Dry Land Agriculture, made a short visit at the station during the week.

Mr. John F. Ross, Superintendent, left April 2, for Guymon, Oklahoma, to give a talk before the Southwest Farmers' Congress, which met April 3 and 4.

KANSAS:

Hays Branch Station. March 28. Maximum temperature during the past week was 54.1 degrees; average minimum, 20; lowest maximum, 31; and highest minimum, 31 degrees. No precipitation has occurred, although the latter part of the week was warm and cloudy, following cold, windy weather. It has been necessary to cultivate the fallow and to run furrows through the alleys of the spring grain area to prevent soil drifting.

Mr. Getty, of the Office of Forage Crop Investigations, arrived at the station after short stops at Lincoln, Nebr., and Manhattan, Kans. Professor Call, of the Kansas Experiment Station, visited the station March 26, and inspected the cereal project.

April 3. Climatological data for the past week:

Average	Maximum	67.1 degrees		
"	Minimum	35.8	"	
Lowest	Maximum	48.0	"	March 30
Highest	"	77.0	"	April 3
"	Minimum	42.0	"	March 31
Lowest	"	26.0	"	" 28

The weather has been cloudy and cold, with a light rain of .15 of an inch March 30 and a trace of rain on April 2.

Winter wheat has made marked growth in spite of the low temperatures. In the rate-of-seeding test the one- and two-peck rates have given good stands.

Spring grains were fully emerged on April 4. The spring grain nursery has not yet been seeded as the danger from soil drifting is still present.

IOWA:

Experiment Station (Ames). April 4. Mr. Warburton reports:

"I arrived here yesterday and found the soil in good shape to begin seeding - in fact, many farmers are already at work. As the seed was all ready, we started seeding of the nursery today, getting in one set of the rod-rows in the breeding work. The last hour we worked this afternoon was in a heavy, wet snowstorm, so it is hard to say whether we can continue Monday or not. It all depends on how much snow or rain falls."

COLORADO:

Akron Field Station. March 31. Wind and sand have cut some of the plats quite badly during the past two weeks, and it is doubtful whether they will fully recover. The nursery has also been somewhat damaged, although it was cultivated by running a hoe between the rows, which seemed to help. Planting of field plats of barley and oats has been completed.

April 4. The varietal field plats were sown on March 30, the seedbed being in very good condition. A light snow fell April 3, which seems to have had a good effect on crops and on the soil, which was very loose and easily blown by the high winds.

SOUTH DAKOTA:

Highmore Substation. April 4. During the past week weather conditions have been favorable for field work. Most of the farm has been put in condition for sowing, so that during the coming week a large amount of seeding can be done. The soil carries enough moisture to give the grain an excellent start, and prospects for a crop this year are excellent.

On April 1, seedings were made in the date-of-seed-test of 4 spring and 1 winter wheats, 2 oats, 3 barleys, 1 emmer, 2 flaxes and 1 winter rye. If favorable weather conditions continue, most small grains will be seeded by April 20.

NORTH DAKOTA:

Williston Substation. March 28. The weather is still very cold, the temperature being down to zero several times during the past week. The ground is covered with snow, and this will help furnish the moisture needed at seeding time.

April 3. No precipitation has occurred during the past week, and if the present weather continues seeding will be started soon. The land on which the varietal tests will be grown this season is in excellent condition for planting. It was summerfallowed last summer, and harrowed on April 4, this being the first working of the soil this season.

MONTANA:

Judith Basin Substation (Moccasin). April 5. The winter has been quite mild, with very little cold weather, although there were several severe storms during the latter part of March. The precipitation for March was 1.12 inches, all of which occurred in the form of snow. The past week has been quite warm and the snow has all melted except for a few drifts.

There appears to have been very little winterkilling of the winter wheats. Spring seeding will probably begin in about two weeks.

Reports indicate that the winter wheat throughout the whole Basin has suffered very little from winterkilling.

UTAH:

Nephi Substation. April 4. Weather has been warm and dry, with a maximum temperature of 68 degrees (April 1); minimum, 28 (April 1). The wind attained a maximum velocity of 4.9 miles per hour on April 2.

The percentage of winterkilling of winter wheat, barley and emmer was slight, but 50% or more of the Boswell Winter oats were killed. The selections made in 1911 from Durum wheat, C.I. No.3095 (S.P.I. No.27514) which are now being grown as a winter crop, are in excellent condition.

Mr. A. F. Bracken, from the Utah Agricultural College, has been appointed by the State officials as an assistant at the Nephi Substation.

Dr. F. S. Harris, Agronomist at the Utah Experiment Station, inspected the substation on April 3.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

APR 17
1914

April 17, 1914.

CEREAL INVESTIGATIONS SPECIAL MEMORANDUM NO. 7.

April 13, 1914

ENVIRONMENTAL EXPERIMENTS.

As the time is now approaching for taking spring and summer notes, the attention of field assistants is here called to the fact that heretofore insufficient data have been obtained on the varieties included in the environmental experiments. A form for taking such notes is attached below. At some stations there are, of course, none of these experiments, but wherever such are located the field assistants representing the Office of Cereal Investigations will be held responsible for the proper conduct of the experiments and are expected to keep close watch of them and record observations as accurately as possible in accordance with the form here given.

Date of				Stand	Tiller- ing	Height plant	Heads per plant	Length of heads	Grains per head	Lodg- ing	Acre yields		Weight per bushel
Plant- ing	Emer- gence	Flow- ering	Matur- ity								Straw	Grain	

Such forms will soon be sent to the field men of the Office of Cereal Investigations.

NOTES ON THE TITICACAN PLATEAU OF PERU
BY MR. HARLAN.

I have been persuaded that my experiments in the Titicaca basin may be of interest to the field men in the interpretation of correlated observations here.

The Titicaca basin is a high plateau in the crest of the Andes, consisting for the most part of the old bed of Lake Titicaca which at one time was much larger than at present. The lake itself is at an elevation of 12,500 feet and from its shores the pampa slopes gradually up among groups of hills that once were islands, until it merges into the flood plains of mountain streams. The upper limits of the pampas are about 14,000 feet high. On either side, running north and south, are the eastern and western ranges of the Cordilleras, whose glacier-crested peaks are usually about 18,000 feet above sea level, although some on the Bolivian side are over 20,000.

Agriculturally the basin is the site of the old Incan civilization and the terraces of the hills date from Inca or Pre-inca times. The hills have apparently always been utilized more extensively than the plain. This is probably due to the fact that they are warmer. Aid drainage is of unusual importance. At such an elevation there is always danger of frost; even on the brightest day in mid-summer a stone more than 6 inches in diameter is as cold as ice. Those areas upon which the cold air drains at night have very frequent frosts while the hillsides and protected spots escape entirely.

Potatoes, a tuberoso oxalis, quinoa and canagua are the most common crops on the plateau. North in the valley of the Vilcanote the climate is more temperate at the same elevation and the altitude drops quite rapidly to lower levels where tropical conditions prevail. The order in which crops appear as one descends are about as follows: canagua, quinoa, oxalis, potatoes, barley, wheat, lima beans, corn. At an elevation of 9,500 feet I found fields that had been cropped continuously to corn for at least 300 years. That good yields were still produced was no doubt due to the profusion of wild legumes that covered the ground after cultivation had ceased.

In my experiments, barleys from Manchuria seemed best adapted to the highlands. My plats looked as well as they ever did in Minnesota and this in a year that was so exceptionally dry that no one else had anything. There was a heavy deposit of anthocyanin in the auricles which are usually colorless. There was also a decided reduction in the length of the later leaves.

FIELD NOTES.

VIRGINIA:

Arlington Experiment Farm. April 15. Cool weather has prevailed the greater part of the past week, with a maximum temperature of 68 degrees (April 8); and a minimum of 25 degrees (April 10). Precipitations of .80 and .59 of an inch occurred on April 8 and 15, respectively, which have retarded practically all field work.

KANSAS:

Hays Branch Station. April 11. The past week has been cold, cloudy and windy, with no precipitation. Average maximum temperature, 54.3 degrees; average minimum, 25.6. Minimum temperature for the week was 11 degrees, occurring on April 8 and 9, and the maximum for these two days was 44 degrees.

As a result of the low temperatures winter wheat is frozen back, a condition which may be beneficial on account of the previous rank growth and the limited amount of moisture present in the soil. It is probable that the semi-hardy winter grains, oats, barley, emmer, spelt and peas may not survive. The spring grains had developed only one leaf at the time of the severe freezing temperature and will probably grow again.

No further field operations have been undertaken. Corn and grain-sorghums are being tested and prepared for seeding. Seed from the 1912 stock will be used in all instances because of the failure of the crop in 1913.

COLORADO:

Akron Field Station. April 10. During the past week the weather has been cold, with little wind. Maximum temperature, 70 degrees; minimum, 15. Of the precipitation, .28 of an inch came in the form of rain and about 1.5 as snow. Spring grains have not yet emerged. Winter wheat is vigorous, except in the nursery where it was damaged by the winds. Winter barley is almost entirely winterkilled.

Reports from farmers indicate that the survival of winter wheat was good, but that considerable damage was done by the high winds coming before moisture had settled the surface layer of the soil.

WYOMING:

Cheyenne Experiment Farm (Archer). April 11. Field work has been impossible during the past week because of the stormy weather. In the time-of-seeding test with spring wheat, oats and barley, a plat of each was seeded April 1, which is the only seeding done to date. Some discing and harrowing have been done, and the land is ready for staking into plats, which work has been begun. About 25 acres of sod are now being broken for use as larger field-plats, principally for forage crops. It is impossible to tell yet what the stands of the winter wheats will be.

Work on the bunk-house is progressing very slowly.

IOWA:

State Experiment Station (Ames). April 8. The weather has been generally unfavorable for early spring seeding. The land was in excellent condition on April 4 and one series of progeny rows in the oat nursery was sown on that day. A light snow fell the afternoon of April 4, followed by a steady rain for several hours the night of April 5. Since then, the weather has been cold, windy and cloudy, with temperatures of 26 to 30 degrees at night.

The Department of Agronomy of the Iowa Agricultural Experiment Station took possession on March 1 of a farm of 163 acres, located two miles south of the college, and purchased at a cost

of approximately \$200 per acre. Practically all the experiments with soil and crops will be transferred to this farm in the near future. The land has already been platted and the preparation of the soil for cropping has been begun. The farm is on the line of the Fort Dodge, Des Moines and Southern electric line between Ames and Des Moines.

April 11. Seeding of the oat and barley nurseries was completed this afternoon. Weather conditions had not been favorable for seeding until today, but the land had been prepared previously and advantage was taken of the first opportunity to finish the work. With the exception of one or two varieties, winter wheat plats are in excellent condition.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). From now on, news notes will be included from the Minnesota station, where this Office conducts cooperative investigations in cereal disease work and barley breeding. Mr. Parker has immediate charge of the smut and rust experiments, while the barley work is conducted by Mr. Harlan.

Mr. Parker has been at University Farm for the past few weeks, preparing the treated seed for sowing in experiments on prevention of smut. The seed for the rust-resistant tests will be sown later.

He reports very bad weather since his arrival, two snowstorms, sleet and rain making field work impossible, but hopes to start planting about April 18.

NORTH DAKOTA:

Dickinson Substation. April 2. There is no snow and the frost is coming out of the ground rapidly. If present weather conditions continue it is expected to begin field work the week of April 6.

April 11. Cool weather, with flurries of snow, has prevented field work until today. The planting of wheat on the Dry-land rotation plats is now in progress. Varietal tests with wheat and oats will be sown in a few days. Although there was practically no snow on the ground all winter

the winter wheat has an apparent survival of about 50%. Conditions are not very good for a crop this season, as the soil is very dry.

Williston Substation. April 13. Weather during the week has been cold, and there have been hard freezes nearly every night. A minimum temperature of 10 degrees occurred on the 8th. Yesterday and today have been very warm, however, and seeding of the nursery has been begun. Seeding of the varietal field plats will be started on April 15.

The State has appointed Mr. C. H. Ruzicka as Superintendent of the Williston Substation, and he took up his duties on March 27.

IDAHO:

Aberdeen Substation. April 13. Thus far the season has been excellent for early spring work, being about 20 days earlier than last year. The frost went out of the ground very early and practically all the snow and rain which has fallen since Jan. 1 entered the soil instead of running off as is usual. As a result the soil is in excellent condition to work.

All the early-sown fall grains are in excellent condition. A hard crust formed early in the spring, however, which makes difficult the emergence of grains which were sown too late to come up in the fall. The time-of-planting test promises to give exactly the same results as last year, early planting being highly desirable.

All the spring seeding of peas, barley, wheat and oats has been completed on both dry and irrigated land. Flax, sweet clover and potatoes will be planted the latter part of April. The field plantings of wheat, oats, and barley on irrigated land make a total of 78 varieties; on dry land, a total of 55 varieties.

The barley and oat nursery will be planted in a few days. More time will be given to this phase of the work this year, and plans are already under way to improve the methods of planting and harvesting practiced last year.

The irrigated potatoes overheated in the pit and all were lost. The dry-land potatoes in another pit, however, are in excellent condition.

All spring work is in good shape and plowing for summer-fallow will begin today.

UTAH:

Nephi Substation. April 11. Weather during the past week has been stormy and cold, with 1.51 inches precipitation. Maximum temperature, 72 degrees (April 5); minimum, 31 (April 8). The greatest daily range in temperature was 34 degrees on April 5. Maximum wind velocity for the week was 3.6 miles per hour.

No spring planting has yet been done, but it is hoped that weather conditions during the coming week will permit field work. The storm during the past week has been of great value to the soil and crop conditions on the Levan ridge, and at present the crops appear in good condition.

CALIFORNIA:

Biggs Cereal Field Station. April 4. Mr. Adams reports that the rice farmers in the vicinity of Biggs are busy plowing.

"There are about 15 caterpillar engines plowing day and night, and about 600 head of mules have been brought in to help plow and prepare land for rice seeding. Work is progressing very nicely. About one-half of the acreage to be seeded to rice has been plowed. There will not be much commercial seeding done until April 15th and the most of it will probably be as late as May 1st on account of the late season or, rather, the wet winter. From present indications the acreage of rice in California this season will be about 14,000 acres. The rice which stood in the shock through the winter has been thrashed. The quality is not good and the growers are unable to dispose of it at satisfactory prices."

He further states that, on the station, the work is progressing very nicely. A portion of the seeding has been

done, and, unless stopped by rain, plantings should be completed by the 15th of April.

OREGON:

Eastern Oregon Dry-Farming Substation (Moro).

April 10. With the exception of three days during the last week of March, spring weather has been very favorable. The maximum temperature during March was 69 degrees (March 17); minimum, 27 (March 26). The total precipitation for March was only .11 of an inch, the smallest March rainfall since 1905. In April, however, .8 of an inch of rainfall has already occurred, which is about .4 of an inch more than the normal for April for the past ten years. Yesterday, April 9, .63 of an inch of rain fell, and it is still raining today. As soon as it stops, and it is dry enough for field work, the spring nursery will be seeded. All other spring grains and all potatoes have already been planted. Owing to the warm weather all grains and peas have emerged, with good stands. Winter grains have made good growth, some winter rye being over 12 inches high.

Mr. Stephens gave a short talk at a farmers' meeting at Wasco on April 9.

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NEWSLETTER
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BUREAU OF PLANT INDUSTRY,
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1914

April 24, 1914.

OFFICE NOTES.

On April 21, Professor T. P. Cooper, of the North Dakota Experiment Station, visited the office, to confer concerning the future conduct of the cooperative cereal work at the Dickinson and Williston substations.

Mr. D. A. Wallace, editor of "The Farmer", St. Paul, Minn., was a caller at the office Tuesday, April 21.

On April 17, Mr. Warburton returned from the State Experiment Station, at Ames, Iowa, where he had been for about two weeks assisting in the planting of the oat nursery.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. April 22. Maximum temperature for the week, 80 degrees (April 19); minimum, 38 (April 18). Total precipitation during the week was 0.91 inch. The early varieties of winter barley and rye are beginning to head. The winter wheats appear more vigorous than at any time during recent years. During the week a little progress has been made in removing weeds from the nursery. Dr. Leighty has some very interesting wheat hybrids in the greenhouse. The cereal disease plantings of barley, flax and wheat will be made during the week of April 27.

TEXAS:

Amarillo Cereal Field Station. April 18. Maximum temperature for the week, 87 degrees; minimum, 30. Weather has been dry and windy. The subsoil contains a fair percentage of moisture, but the surface 3 inches is quite dry. A recent hailstorm has caused a crust on the surface that is

hindering the emergence of some of the spring grains. In the nursery the grains have germinated, but the growth is quite slow. The nursery and the winter wheat plats have been harrowed.

Mr. Ross has returned from an automobile trip through the shallow-water district of Texas and New Mexico, with Mr. H. M. Bainer, Agricultural Demonstrator for the Santa Fe system.

KANSAS:

Hays Branch Station. April 18. Weather during the past week has been generally unsatisfactory for growing crops, the temperatures being low, with very high winds and no precipitation. The winds have made it difficult to hold the spring grain area, and if they continue it will be necessary to list the whole area. During the first part of the week, seedings were made in the date- and rate-of-seeding tests of Burt oats, and in the environmental test with Kunkin wheat, C. I. No. 1440.

COLORADO:

Akron Field Station. April 18. Maximum temperature for the week, 77 degrees; minimum, 24. Precipitation of 0.73 inch has occurred. Spring wheat emerged the first part of the week, and barley and oat varieties are now well out of the ground. Wind and rain have delayed the nursery planting, which is now in progress.

WYOMING:

Cheyenne Experiment Farm (Archer). April 19. Maximum temperature for the week, 70 degrees; minimum, 20; mean, 44. Precipitation during the week of April 6 was 0.68 inch, during the past week 0.44 inch. This precipitation should insure rapid germination and a good start for the spring-sown crops. Active field work began on the 13th and continued until the 17th, when a snow storm, accompanied by a strong northwest wind, made it impossible to continue. Nine acres were

seeded to oats to be used as forage. Weather permitting, seeding of the varietal plats will begin on the 20th.

Contrary to previous reports, it appears that winter-killing of the fall-sown crops has been very severe. Winter oats, barley, spelt, and emmer have apparently entirely winterkilled, while some varieties of winter wheat have killed badly in patches, the fall growth at present being dry and rotted off at the root crowns. Buffum's Turkey, C. I. No. 3330, has the highest survival among the winter wheats. In the time-of-seeding tests with winter wheat, the early seedings have winterkilled as badly, if not worse, than the later ones, regardless of the better growth made last fall. There is very little winterkilling of the winter rye.

Spring plowing on the Dry-Land Agriculture rotation plats is completed and some disking has been done.

Work on the bunk house is progressing nicely.

SOUTH DAKOTA:

Bellefourche Experiment Farm (Newell). April 18. Weather during the first part of the week was fair and warmer. Rain began on the 16th and was followed by high winds and lower temperature. A high wind on the 10th caused drifting of the soil on the winter wheat plats, but no damage was done. The head-row seedings of winter wheat in the nursery were covered with soil which had to be removed. The varietal and rate-of-seeding tests of spring wheat on the dry land have been sown. All oat varieties were seeded today, and the barley varieties will soon be sown. All varieties of winter wheat appear in good condition, and the prospects for a crop are very favorable at this time. Fall rains have left the soil in good condition and all crops are starting into growth in the best possible manner. Preparations have been made for the seeding of the spring wheat nursery and this will be begun the early part of next week.

Highmore Substation. April 13. Owing to the clear weather it has been possible to bring the field work practically up to date. The environmental oats were sown

April 13. The sowing of the "B" class nursery, consisting of over 250 one-hundredth-acre plats, will be begun on the 15th.

April 18. Work during the past week has progressed nicely. All "B" class seedings would have been finished today if 0.57 inch precipitation had not occurred the night of the 17th. The rain is still falling today. This rain will be very valuable in starting the crops and making plowing possible. Most of the fields are the driest they have been in years at this season.

During the last three days, prairie fires have destroyed several thousand acres of native pasture. It was necessary for the whole station force to assist in checking the fires which have threatened the station and city.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). The week of April 13 was warm and clear, but on the night of the 18th a sleet and snow storm occurred. The field to be used for the cereal disease work has been disced, harrowed, and pulverized and is now ready to be staked into beds. It is expected to start the seeding on April 22.

NORTH DAKOTA:

Williston Substation. April 20. Weather during the past week has been favorable for field work. Precipitation of 0.09 inch has fallen. The soil is in good condition for working and there seems to be considerable moisture near the surface. The varieties of wheat and oats were seeded on April 16 and 17, in duplicate plats of 1/25 of an acre each. The rate-of-seeding test with wheat and oats and the date-of-seeding test with wheat, oats, barley and flax have also been seeded in plats of the same size. All rod-row wheats, with the exception of those recently received from Mr. Ball, have been sown in the nursery in duplicate, there being 137 different varieties and strains. The seeding in duplicate of 95 different strains of rod-row oats is in progress. Winter wheats are surviving with fairly high stands. This will be the first year that any of the row seedings on bare ground have survived. More accurate account of the survivals will be given later.

UTAH:

Nephi Substation. April 18. Maximum temperature for the week, 74 degrees (April 15); minimum, 31 (April 16). Maximum wind velocity, 5 miles per hour (April 17). A precipitation of 0.67 inch occurred on the 16th. This makes a total for this month to date of 2.18 inches as compared with 0.86 inch of rainfall for April, 1913. On account of the continued wet weather, spring planting has not been completed. General crop and soil conditions are good.

CORRECTION.

In Mr. Harlan's article on his experiments in Peru in last week's Newsletter, a typographical error occurred in the second paragraph. The fourth sentence should have read - "Air drainage is of unusual importance."

SPECIAL REQUESTS TO FIELD MEN.

Any of the field station men who can furnish Einkorn or Polish wheat, will please send any available quantity, from a few seeds to a pound or more, to the office at once.

All in charge of cereal work at field stations will please send in immediately to the Cerealist an itemized statement of necessary expenditures to June 30. This is essential in order that sufficient funds can be reserved for the needs of each station.

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NEWSLETTER

OF THE

OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,

U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

MAY 1
1914

May 1, 1914.

OFFICE NOTES.

On April 27, Mr. Bert D. Ingles, chief chemist at San Francisco for the Sperry Flour Company, called at the office to discuss with the Cerealists the grading of flours and the production of wheat hybrids in Oregon and Washington.

Mr. E. C. Johnson's paper "A Study of Some Imperfect Fungi Isolated from Wheat, Oat and Barley Plants" appeared in the March "Journal of Agricultural Research", and has also been issued as a separate. Another recent publication on the subject of imperfect fungi affecting cereals which should be of interest to the scientific force of the office is Bulletin No. 107 of the North Dakota station, by Prof. H. L. Bolley, on wheat-sick soils.

UNITED STATES CIVIL-SERVICE EXAMINATION.
SUPERINTENDENT OF CEREAL FIELD STATION (MALE).
June 8, 1914.

The United States Civil Service Commission announces an open competitive examination for superintendent of cereal field station, for men only. From the register of eligibles resulting from this examination certification will be made to fill a vacancy in this position in the Bureau of Plant Industry, Department of Agriculture, for service in the Pacific Northwest, at a salary ranging from \$1,800 to \$2,000 a year, and vacancies as they may occur in positions requiring similar qualifications, unless it is found to be in the interest of the service to fill any vacancy by reinstatement, transfer, or promotion.

The duties of this position will include personal supervision of experiments in testing and improving cereals, the direction of the labor employed at the field station, and keeping a general oversight of the time and equipment of the force.

Competitors will not be assembled for examination, but will be rated on the following subjects, which will have the relative weights indicated:

	<u>Subjects</u>	<u>Weights</u>
1.	General education and technical training-----	25
2.	Practical experience and fitness-----	30
3.	Practical farm problems-----	25
4.	Thesis-----	20
	Total-----	100

No application will be accepted unless properly executed, excluding the medical certificate, and filed with the Commission at Washington, with the material required, prior to the hour of closing business on June 8, 1914.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. April 29. Weather during the past week has been generally fair and warm, with a maximum temperature of 83 degrees (April 29) and a minimum of 41 (April 24). A precipitation of 0.85 inch occurred on April 26. The removing of weeds from the winter oat nursery has been completed. Mr. C. H. Clark completed the seeding of his flax nursery today. The Arlington Awnless, Virginia Hooded, and several of the other earlier varieties of winter barley will be fully headed before the end of the week. The winter ryes are also heading rapidly.

TEXAS:

Amarillo Cereal Field Station. April 25. A light shower occurred the evening of April 18, but the weather during the week has been generally dry and windy. The average velocity of the wind for a period of 96 hours was 16.4 miles per hour. In the nursery the stands of spring grains have been taken, and flax and the second lot of wheat sent out by Mr. Ball seeded.

KANSAS:

Hays Branch Station. April 25. Weather during the past week has been generally unsatisfactory for plant growth, high winds and low temperatures prevailing. There has been no precipitation. On the cereal project, the spring grain plats have continued to suffer from the wind and dry weather. Spring wheat is in fair condition, barley poor, and oats very poor. No other part of the project has suffered, though winter wheat can only develop slowly under the dry conditions. No effort has been made to seed the small plats of spring grain and flax, and probably will not be until a definite change in the weather has taken place. Corn and the early plats of grain sorghums will be planted next week, the weather permitting. Germination tests of 1909, '10, '11, and '12 corn and the 1912 sorghums have been very satisfactory.

The whole station has suffered from the soil blowing. It is reported that the damage in the counties west and north of Ellis has been enormous.

COLORADO:

Akron Field Station. April 25. Maximum temperature for the week, 79 degrees; minimum, 28. Precipitation, 0.89 inch. The rain was accompanied by high winds which beat down the grain badly, so that the plantings do not look as well as they did. A good stand of spring wheat, barley and oats has been secured in the field plats. Counts on the spring wheat show stands of from three hundred to five hundred thousand plants per acre, an almost perfect germination. The winter nursery will not recover sufficiently from the effect of the wind and sand storms of this spring to make it possible to obtain yield comparisons on many of the rows, although none were entirely killed.

WYOMING:

Cheyenne Experiment Farm (Archer). April 26. Maximum temperature for the past week, 69 degrees; minimum, 23. Precipitation, 0.02 inch. The weather during the past week has been favorable for field work, and the seeding of the

varietal tests of wheat, oats, and barley, and the nursery varieties of oats and barley, has been done.

Wheat, oats, barley and peas have also been seeded on the Dry-Land Agriculture rotation plats.

SOUTH DAKOTA:

Highmore Substation. April 28. The weather still remains cold and cloudy, with every indication of more rain or snow. During the past two days it has rained almost continuously, and up to date there have been 3.61 inches of precipitation this month. All class "B" seedings, with the exception of the late date-of-seeding test and the flax varieties, have been made. There are about 250 hundredth-acre plats in this class. All the environmental seedings except flax were made before the rain, and all other planting will be done as soon as the ground dries out sufficiently. The early seedings in the date-of-seeding tests have emerged and are in very good condition. Spring wheat varieties are emerging and the stands are excellent. Very little winter wheat is alive, but winter rye is growing nicely. At the present time crop prospects are excellent. Mr. Ball's shipment of wheats has been received and will be sown in red rows.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). April 28. Heavy precipitation during the past week has interfered with field work, there having been over 2 inches of rain since April 23. The temperature has ranged between 40 and 60 degrees. One set of the date-of-seeding tests with stinking smut of wheat was sown April 22 and another will be put in this week. One-half of the experiment with the new fungicide "Seedolin" as a smut preventive in wheat, oats, and barley has been seeded. A series of 110 increase rows of 11 different "rust" hybrids has been sown, using the replicate system of seeding. Four-pound samples of several "rust" hybrids are to be seeded this year at Highmore and Brookings, S. Dak., and at St. Paul and Crookston, Minn. The 82 samples of wheat and barley treated for loose smuts have been turned over to the Agronomy Division for planting.

NORTH DAKOTA:

Dickinson Substation. April 22. Precipitation for the past two weeks, 0.40 inch. Light frosts have occurred several nights. High winds have prevented the seeding of any of the nursery. The varietal plats of wheat, oats and barley have been sown. The system of reducing the size of the plat and repeating the varieties four times was adopted this year. No more time was required for seeding under this system, as both time and space were saved by the elimination of the check plats.

Williston Substation. April 27. The first part of the week was very windy, while the latter part was warm, with little wind and occasional showers. Total precipitation, 0.13 inch. The maximum temperature for the week was 55 degrees; minimum, 24. The first seedings of wheat in the nursery have emerged and the germination has been excellent. The field plats and row seedings of oats have been sown, and nearly all seeding is done except barley, flax and the prosos.

Mr. J. S. Cole, of the Office of Dry-Land Agriculture, visited the station on April 25.

MONTANA:

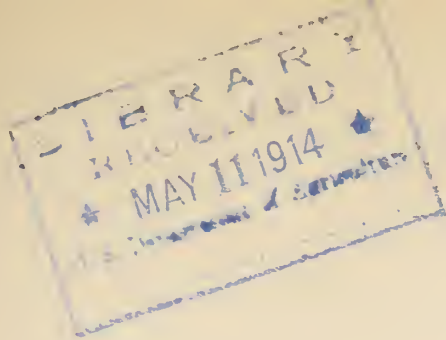
Judith Basin Substation (Moccasin). April 18. Precipitation during the past week, 0.28 inch. The weather has been quite warm with considerable wind, so the ground has dried out rapidly and field work has been started. If the present weather continues seeding will begin on the 20th. The fallow ground where the spring cereals are to be planted has been harrowed and is in excellent condition.

Five carloads of Marquis wheat have been shipped into the Judith Basin by the Elevator companies, with the intention of selling it to the farmers for seed. Owing to the bad weather last fall many of the farmers were unable to sow their winter wheat, so that an unusually large amount of spring wheat will be seeded.

UTAH:

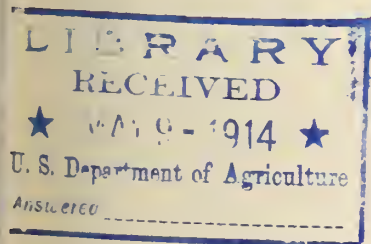
Nephi Substation. April 27. Weather during the past week has been cold and stormy. Maximum temperature for the week was 73 degrees (April 21); minimum, 28 (April 23). Precipitation of 0.27 inch occurred on April 24, with a hail storm the following day. The wind reached an hourly velocity of 3.1 miles on the 23d.

Spring planting of cereals on field plats has been completed, but the nursery planting is delayed by the stormy weather, which has also made spring plowing impossible. Harrowing of the field plats of winter cereals has been completed. Fall-plowed land is now covered with a heavy stand of volunteer grain, which will be destroyed as soon as the soil conditions will permit. All crops are in good condition, especially the alfalfa, which is about six inches high.



NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.



VOLUME VI

MAY 8
1914

May 8, 1914.

OFFICE NOTES.

In the Washington Sunday Star of May 3, in an article by Mr. Frank G. Carpenter, entitled "Farming and Stock Raising in Peru," several paragraphs were devoted to Mr. Harlan's recent experiments with grains on the Titicacan plateau.

Mr. B. E. Rothgeb left for Woodward, Okla., May 6, to plant broomcorn and grain-sorghum varietal and rate-of-seeding plats on the new experiment farm of the Office of Dry-land Agriculture located at that point. From there he will proceed to Amarillo, Tex., to plant the grain-sorghums and broomcorn on that station. This office expects to place a representative at the Woodward Field Station, on July 1.

MEETING OF THE GREAT PLAINS COOPERATIVE
ASSOCIATION.

The Great Plains Cooperative Association will meet at the Hays Branch Station, Hays, Kans., from Wednesday to Friday, July 8 to 10, inclusive. It is expected that all the representatives of this office located in the Great Plains area will be authorized to attend this meeting unless local conditions make it impossible for them to leave their stations at that time. A full program of good material is desired and field men should send in titles of proposed papers as promptly as possible.

CONDITION OF EXPERIMENTS AT COLLEGE PARK, MD.

Mr. T. R. Stanton visited the Maryland Experiment Station (College Park) on May 2, and inspected the soil exchange experiment located at that point. The plants on none of these plats were vigorous. The degree of vigor was about as follows: Kansas, fair; Cali-

fornia, poor; Maryland, very poor. The survival was about the same, however, for the three soils. The Kansas and California soils appeared dry and were badly cracked, while the Maryland soil was not so dry and was not cracked. The condition of the other cooperative cereal work was also briefly noted. All winter grains except winter oats, in which considerable winterkilling had occurred, were quite promising. Indications were never better for a big crop of winter wheat. The Arlington Awnless winter barley was fully headed, but did not seem of any more promise than past experience with this variety has indicated.

FIELD NOTES

VIRGINIA:

Arlington Experiment Farm. May 6. Maximum temperature for the week, 85 degrees (April 29); minimum, 37 (May 3). Precipitation, 1.65 inches. Total precipitation for April, 3.72 inches. The heavy precipitation (0.82) which occurred on the morning of May 5 caused considerable lodging in some of the more vigorous plats of winter rye, and unless clear weather follows it is doubtful whether much of it will recover. Flax plantings which were made last week have emerged and in most cases germination was very good. A number of Dr. Leighty's wheat hybrids in the greenhouse are ripening.

LOUISIANA:

Crowley Rice Experiment Station. April 25. Mr. Jenkins reports that all nursery rices germinated on April 24. He also states that the demand for seed rice of new varieties has been greater than he could supply.

Heavy rains continue to retard rice planting in Louisiana and Texas. Less than one month of the regular planting season remains and less than half of the crop is planted.

It is generally believed there will be some reduction in the rice acreage in all parts of the rice belt, with heavy reductions in the Mississippi River section and in the territory west of Houston.

KANSAS:

Hays Branch Station. May 2. The weather during April was cloudy, windy and cold, with several heavy dust storms. Maximum temperature was 96 degrees and the average 69; minimum, 11 degrees and an average of 36.1; mean, 52.5. The total precipitation for the month was 2.31 inches, 0.09 inch above the normal, but nearly all of this (2.1 inches) occurred on the 27th and 28th. The precipitation (3.5 inches) which occurred during the past week ended the danger from soil blowing which has existed for more than a month. There was little runoff except on sharp slopes. Fields are very wet, and several days must elapse before field work can be resumed. Maximum temperature for the week was 83 degrees; minimum, 37; average maximum, 67; average minimum, 41.4.

The early drought, while beneficial to the heavy thick wheat in retarding its growth, has been detrimental to the thin stands of poorly rooted winter wheat, which have blown out quite extensively in many sections. The dry weather has also prevented completing the seeding of spring grain, and has retarded the growth of that which has been sown.

On May 2, the meeting of the Western Kansas Feeders was held, at which time the cattle men of the western part of the State inspected the herd of 400 cattle maintained on the station, and heard a report and discussion of the feeding experiments conducted during the past winter at Manhattan and Hays.

COLORADO:

Akron Field Station. May 2. Maximum temperature for the week, 56 degrees; minimum, 34. Precipitation of 2.16 inches has occurred, and as there was little runoff it will be very beneficial to the crops. The planting of the nursery and some of the

date-of-seeding tests has been delayed by the rain. Field plats are in good condition. About two hundred rows of spring wheat have emerged in the nursery.

Dr. H. L. Shantz is at the station looking after the plantings for the transpiration experiments. Mr. R. L. Piemeisel is doing work in drought resistant physiology, in connection with the work of Dr. Shantz.

WYOMING:

Chevenne Experiment Farm (Archer). May 3. Maximum temperature for the week, 50 degrees; minimum, 31. Precipitation, 1.96 inches. The rainfall for April has been considerably above the normal for this locality. Field work has been impossible during the week because of the stormy weather. In the time-of-seeding tests with wheat, oats, and barley, the plats seeded April 1 emerged on April 24 with a fairly good stand.

SOUTH DAKOTA:

Highmore Substation. May 2. Weather conditions during the past week have made it impossible to get into the fields until yesterday, and then satisfactory work with a grain drill was difficult. The flax varieties and date- and rate-of-seeding tests were sown. Today continues stormy and cold, with very little evaporation. Spring conditions are excellent to promote the growth of the grain.

IOWA:

State Experiment Station (Ames). April 29. Grain in the nursery has emerged and is in very good condition. Plant growth has been very rapid. The pathology plats were seeded April 25, and a rain which has occurred since then will be beneficial.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). May 5. Weather during the past week has been cool, with a maximum temperature of 67 degrees (May 4), and a minimum of 35 (April 29). Precipitation occurred on the 3d and 4th. Seeding in the cereal disease plats is progressing nicely. Three men seeded 178 rows on May 2. About 700 rows of individual selections remain to be sown. Seedlings made April 22, 23 and 25 have emerged. The soil is in very good condition, and there is plenty of moisture to promote the growth of the grains.

Weather records, including rainfall, soil and air temperatures, humidity, and evaporation, are now taken regularly at 7 A.M. and 7 P.M. on the cereal disease plats.

Farmers report seeding delayed in the Red River valley, with a probable reduction in the wheat acreage.

NORTH DAKOTA:

Dickinson Substation. May 2. Maximum temperature for the week, 75 degrees; minimum, 20. Precipitation 0.20 inch, which came in the form of two inches of snow, on April 28. Precipitation for April was 0.39 inch below normal, that for the past four months 0.46 inch less than normal. The following table gives the precipitation for this year compared with a 22-year normal:

<u>Month</u>	<u>1914</u>	<u>Normal</u>
January	0.04	0.43
February	0.43	0.47
March	1.27	0.92
April	<u>0.80</u>	<u>1.19</u>
Total	2.54	2.91

The grain on the varietal plats of wheat and oats has emerged and good stands were obtained. The nursery planting is about half completed. On April 30,

Mr. Clark, with one assistant, planted 424 17-foot nursery rows in five and one-half hours, the method of planting being the same as that used at the Arlington Experiment Farm.

Williston Substation. May 4. The weather was cold and stormy during the first part of the week, with the following minimum temperatures - 24 degrees, April 27; 23, April 28; 25, April 29. A precipitation of 0.3 inch occurred on the 28th, in the form of snow, making a total for the week of 0.33 inch. The cold weather has retarded the growth of the grains, and wheat and oats seeded in field plats on April 15 did not emerge until May 1. Barley varieties were sown in the field plats on May 2. The second seeding of wheat, oats, barley and flax in the date-of-seeding tests was made on the 1st.

MONTANA:

Judith Basin Substation (Moccasin). May 1. Seeding of the spring cereals has been completed, five 1/50th acre plats of each variety being sown. The seed bed was in excellent condition and at present there is plenty of moisture in the ground. Because of the cool weather during April the winter wheat has made very little growth; however, there seems to have been little winterkilling.

UTAH:

Nephi Substation. May 2. Weather during the past week has been cold and stormy. Maximum temperature, 65 degrees (May 2); minimum, 29 (April 30). Maximum wind velocity, 4.7 miles per hour (May 1). Precipitation, 0.71 inch. Total precipitation for April, 3.2 inches. Field work has been very much delayed by the continued wet weather. Spring crops planted during the middle of April are beginning to emerge.



NEWSLETTER

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VOLUME VI

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1914

May 15, 1914.

ATTENTION OF FIELD MEN.

The field assistants will remember some discussion during the winter of the importance of properly labeling the experimental plats at the different stations. As the time is now near when different members, not only of this office but of other divisions of the Department, will inspect the cereal stations and various visitors will wish to see the experiments, the attention of field men is again called to this matter. Every variety in the nursery should be labeled with at least the C. I. number, and the different groups of varieties and larger plats so marked with a suitable key to these numbers that the observer may be able to know exactly what he is inspecting.

Field men should keep in mind the necessity of sending in promptly the titles of proposed papers which they may wish to present at the meeting of the Great Plains Cooperative Association in July.

OFFICE NOTES.

Judge Haymaker, of Wichita, Kans., was a visitor at the office, on May 13.

Director A. F. Woods, of the Minnesota Experiment Station and formerly assistant chief of this Bureau, visited the office May 15, to confer concerning the cooperative work at University Farm.

CEREAL DISEASE NOTES.

Practically all of the cereal disease planting to be done this spring on the Arlington Experimental Farm has been completed. The Wisconsin barleys are already up, as

are also several of the inoculated varieties received from Dickinson and Williston, N. Dak. Seed of the Wisconsin barleys, received from the Wisconsin Experiment Station, is infested with three separate species of *Helminthosporium*.

During the past eight months several cereal disease fungi have been isolated in the local laboratory, six of these appearing to be distinct species of *Helminthosporium* affecting wheat and barley. An extensive series of experiments relative to the relation of these several organisms to various cereal crops are this year being carried on at the Arlington Farm.

Three Livingston radio-atmometer cups have been installed in the Arlington cereal disease nursery. Readings from these instruments taken during the growing season will indicate the rate and amount of evaporation taking place in the nursery, and will constitute important data in the final summing up of the relation of growth factors to the severity of diseases.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. May 13. Weather has been fair and warm during the past week, with a maximum temperature of 91 degrees (May 12); and a minimum of 46 (May 9). Total precipitation for the week has been 0.10 inch. Early varieties of winter wheat and oats are beginning to head.

The junior and senior classes in Agriculture of the Maryland Agricultural College visited the farm on May 7. They were accompanied by Professors Taliferro and Munroe of the agricultural and horticultural departments, respectively, the former manifesting considerable interest in the cereal work.

OKLAHOMA:

Woodward Field Station. May 9. The land allotted to the broomcorn and grain-sorghum work is sod land and is in good condition for planting. The plats

have been measured and staked, and planting will be begun on May 11.

The spring grain, including corn, is up and in good condition. A heavy rain fell about a week ago and there is at present about 12 per cent of moisture in the first foot of soil.

Work on the station buildings is making satisfactory progress. The barn will be ready for use next week, the cottage is being plastered, and the foundation is in for the office building.

COLORADO:

Akron Field Station. May 9. Weather during the past week has been warmer, with a maximum temperature of 75 degrees, and a minimum of 34. About two hundred more nursery rows have been planted, and a count taken on some of the rows. Flax varieties were seeded on May 5. Spring plantings are in good condition.

May 11. Warm weather during the past few days is causing good growth of all spring grains. Winter wheat was badly damaged by wind, the survival not being greater than 50 per cent in a number of cases. During the coming week, counts will be taken on the nursery rows, flax will be seeded and some of the weeds removed.

Dr. Shantz of the Office of Alkali and Drought-Resistant Plant Breeding Investigations, returned to Washington on May 7. Mr. Hird of the Office of Biophysical Investigations arrived at the station to assist in the transpiration work.

WYOMING:

Cheyenne Experiment Farm (Archer). May 10. Maximum temperature for the past week 77 degrees; minimum, 27. Wheat, oats and barley in the varietal tests are emerging nicely, and indications are that the stands will be good. Winterkilling of the fall-sown crops was so severe that comparisons between the varieties would be an impossibility, therefore all the plats except four were reseeded to oats and barley for horse feed. Eleven acres were seeded to peas and oats on the 5th, for forage purposes. The wheats received from Mr. Ball have been sown in the nursery, a rod row being devoted to each variety.

The winter wheat plats on the Dry-Land Agriculture rotations were reseeded to spring wheat.

Mr. W. W. Burr, of the Office of Dry-Land Agriculture, visited the station on May 8.

SOUTH DAKOTA:

Bellefleur Experiment Farm (Newell). May 8.
Following is a report for April:

Precipitation during April was 1.09 inches. This came in small showers and interfered with field work almost every day. Weather has been generally cold, with rather high northwest winds.

During the month all varieties of oats, wheat, barley and emmer have been seeded on both the dry land and irrigated plats. This leaves only a part of the nursery and the flax varieties to be sown, and this will be done as soon as the danger from late frosts has passed.

All of the fall grains except emmer are looking exceptionally well and with favorable weather they should give good results. Emmer in the field plats and nursery winterkilled badly. The selections of winter wheat, which were planted in five-foot head rows, germinated poorly and have also killed to a certain extent, so that the stand is quite thin. It may be possible, however, to get some good plants from the rows. In the date-of-seeding test of winter wheat, the earlier plantings seem to have somewhat the advantage of the later ones. Rye is making unusually good growth, and is very promising at present.

All spring grains have good stands, and the conditions since planting time have been very favorable to their growth.

State Experiment Station (Brookings). May 1.
Mr. Champlin makes the following report on general conditions in South Dakota:

There has been an abundance of rain to date. Last week there were several good showers at each of the farms operated by the station. At Highmore and Cottonwood, the amount was about 1 inch; at Brookings, 0.35 inch;

and at Eureka, 0.70 inch. All seeding has been delayed by the late spring and rainy days, but the moisture was very much needed.

The crop mixture experiment has been placed in the trials at both Highmore and Brookings. The mixtures used are barley and oats, oats and emmer, barley and emmer, and oats and peas. The oats and peas are in the test at Brookings only.

Mr. Champlin spent the week of April 6 to 11 with a special train devoted to better farming in South Dakota. He spoke on the subject of crops that can be grown to be fed on the farms. At all of the towns along the C.M. & St.P. railroad from Wolsey to Rapid City, he emphasized particularly the use of kaoliang, Kursk millet, and Sixty-Day and Swedish Select oats, growing these crops in the dry portion of the State by the three-row method which was tried with such success at Highmore last year. In the more humid sections ordinary methods of cultivation should be used.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). May 13. Maximum temperature for the week, 70 degrees (May 9); minimum, 32 (May 12). Cloudy, cool weather has prevailed, with precipitation on May 8, 9, 11, and 12.

Planting of the rust nursery was completed May 11. Several plats of wheat for testing the effect of fertilizer treatments on rust-resistance are being seeded today. Border rows for rust-inoculation will be drilled this week. Barberry bushes in rust plat show young cluster cups of Puccinia graminis on leaves.

NORTH DAKOTA:

Dickinson Substation. May 9. Maximum temperature for the week, 74 degrees; minimum, 29. Precipitation was 0.80 inch, which came in the form of snow and rain on May 5 and 6. With the exception of flax and prosos, all planting in the field and nursery is completed. The grain is now making rapid growth.

Williston Substation. May 5. Mr. Babcock gives the following report on the survival of the winter wheats:

The winter wheats were sown both on bare fallow and on corn ground with the stalks left standing. The varieties on corn land were sown with a field drill; those on fallow with a Planet, Jr. hand drill. There is a marked difference in the survival from the two methods of planting. The plats in standing corn stalks survived as follows: C.I. No. 3330 (Buffum No. 17), C.I. No. 3084 (W.D. No. 1997), and C.I. No. 1543 (Beloglina), 95%. Beloglina seeded on Aug. 18 made a survival of 95%, but that seeded on Sept. 2 germinated only 50% and only 50% of this survived the winter.

The survival of the 44 strains planted on bare ground varies from 0 to 92%. Thirty-six of these were winter wheat selections received in the fall of 1913 from Mr. Salmon of the Bellefourche Experiment Farm. This is the first year that the row plantings on bare ground survived at all.

May 11. Weather during the past week has been cold and the storms have delayed field work throughout this part of the state. On May 5 and 6 there was a heavy fall of wet snow, which stopped field work until the 9th. Maximum temperature for the week, 74 degrees; minimum, 31. Precipitation, 0.84 inch.

The wheat and oats in the varietal tests and nursery are making slow growth but stooling well. The second planting of wheat, oats, barley and flax in the date-of-seeding tests was made on May 1. The barley varieties in field plats were also sown on that date. The 4 small samples of wheat, emmer and einkorn, and the 26 of wheat, sent by Mr. Ball have been planted. The nursery rows of barley and flax will be sown this week.

MONTANA:

Judith Basin Substation. May 9. A snow storm which began on May 4 and lasted a day and night gave 0.45 inch of precipitation. On the night following the storm the minimum temperature was 21 degrees, and on the next night 22. The spring wheat, oats, barley and the early planting of flax had all emerged before the storm, but they were not injured by the storm or low temperature. With the exception of increase fields of White Smyrna barley and Sixty-Day oats which are being sown now, all seeding of spring grains is completed.

IDAHO:

Aberdeen Substation. May 3. Work on the station is progressing very nicely. The planting of the barley and oat nursery will be begun on May 5 or 6. The weather continues cold and very little growth is being made by any of the crops except winter wheat. The early-sown Turkey wheat is growing very rapidly.

May 10. Weather has been warmer for the past three days, causing a noticeable increase in the growth of all cereals. Winds have been very high, but the blowing soils on the dry farm are now under control and very little damage has been done this season. Practically all planting on both irrigated and dry land has been completed. A part of the nursery still remains to be seeded, but this will be finish by May 12. All early planted winter wheat is in excellent condition.

The alfalfa used in the rotation experiments on dry land grows more rapidly and makes deeper root-growth than the sweet clover. It is therefore better for early pasture, which will probably mean that alfalfa will hold a very prominent place in the dry farm rotation where wheat is the major crop. All late planted wheat in the rotations, which follow potatoes, is not in good condition. This will no doubt be a drawback in the use of the potato in the dry land rotations. It may be that an early variety of potato can be used thereby permitting earlier planting of wheat.

Most of the canals and laterals on the station are now in excellent condition, thus facilitating the work in controlling the water flow.

The farmers on the dry land are beginning to complain of lack of sufficient rainfall to keep the winter wheat growing well.

UTAH:

Nephi Substation. May 9. The weather during the past week has been generally fair, with a maximum temperature of 79 degrees (May 7); minimum, 27 (May 4). Precipitation, 0.05 inch (May 3). The greatest daily range in temperature was 36 degrees on May 7. Maximum wind velocity, 5.8 miles per hour on May 4. All spring planting

has been completed. The spring crops that were sown during the latter part of April have emerged and are making good growth. The surface soil is drying very rapidly and it is expected that spring plowing will be continued next week.

CALIFORNIA:

Biggs Cereal Field Station. May 4. Mr. Adams reports that the rains since March 15 have caused very little delay in the work on the farm. The majority of the rice varieties are emerging.

State Notes: "Aside from the late date of seeding, most of the farmers are seeding in poorly prepared ground and many are broadcasting their seed. There will be more late rice this year than last and the crop will not be well put in."

The area seeded to rice in California this season is approximately 15,440 acres, distributed as follows: Sacramento Valley, 15,090; San Joaquin Valley, 340; and Imperial Valley, 10. Eleven thousand acres are planted in Butte County, the majority of which is in the vicinity of Biggs.

OREGON:

Eastern Oregon Dry-Farming Substation. May 10. Following is a brief progress report on the work of the station.

The highest temperature for the month was 67 degrees (April 21); the lowest, 32 (April 15). Precipitation was considerably above normal, the total being 2.06 inches. Considerable hail accompanied a rain of .42 inch on the 26th. An unusually high temperature of 80 degrees was reached on May 1.

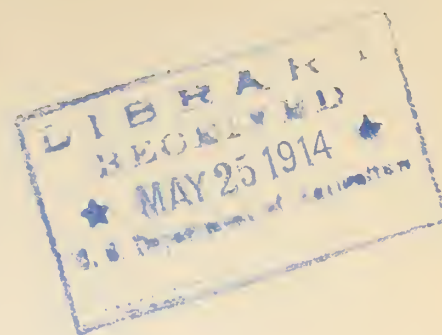
Winter grains are in good condition and have made rapid growth during the last two weeks. Winter rye (Abruzzes) is fully headed and some of the winter barleys are beginning to head. Our winter grain harvest will probably begin two weeks earlier than usual. Some damage has been done to both winter and spring grains by wire worms, the spring grains suffering most. Some of the earliest seeded plats of spring wheat have many areas on them of from three to six square feet in which every plant is killed by these pests. All seeding has been completed.

The following is a list of the experimental work being carried on this season:

Varietal tests, total number	222
Nursery " " "	406
Tenth-acre plats used	431

Summer fallow	50 acres
Cereals for increased seed	
Winter wheat	20 "
" rye	6 "
Spring wheat	2 "
" oats	7 "
" barley	3 "
Corn	<u>3</u> "
	44 "

Harney Branch Station (Burns). May 7. There has been a total precipitation of less than two inches for the past three months, with slightly higher temperatures than is usual at this time of year. The minimum temperature registered in April was 23 degrees, whereas it is usual to have a minimum of 10 or less. As an unusual amount of moisture was taken into the soil during the winter, the lack of rainfall has not damaged the crops as yet. The winter wheats are making good headway and show excellent stands. Barley and emmer withstood the winter without noticeable injury. The mild winter and a good covering of snow account for the unusually good survival of the winter grains. Seeding of field peas, wheat and oats is concluded, with the exception of the date-of-seeding tests. The crops are now emerging and show good stands. Barley and flax varieties are being seeded at present.



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May 22, 1914.

OFFICE NOTES

Dr. Beverly T. Galloway, Assistant Secretary of Agriculture, and Chief of the Bureau of Plant Industry from its organization in 1901 until 1913, has accepted the position of Director of the Cornell Agricultural Experiment Station and Dean of Agriculture at Cornell University. It is expected that he will assume his new duties on either July or August 1, thereby terminating 26 years of continuous service in the Department of Agriculture.

Mr. Carleton left on May 18 for College Station, Tex., to confer with Director Youngblood, of the Texas Stations, regarding cooperative work at Beaumont. He will also visit other experiment stations in the SouthwWest, and will return to Washington about June 15.

Mr. Potter left Washington on May 20 for Manhattan, Kans., where investigations in the study of the smuts of corn and sorghum are in progress. From there he will go to Mitchell, Nebr., where he will carry on similar experiments at the Scotts Bluff Experiment Farm. He will also visit the Bellefourche Experiment Farm, at Newell, S. Dak., on his way to the experiment station at St. Paul, Minn., where an extensive line of cereal disease experiments is under way, expecting to reach that point about July 1.

Page proof of Department Bulletin No. 99, "Tests of Selections from Hybrids and Commercial Varieties of Oats," by Messrs. Warburton, Burnett and Love, and galley proof of Farmers Bulletin No. 596, "The Culture of Winter Wheat in Eastern United States," by Dr. Leighty, have been read during the week.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. May 20. Weather during the past week has been fair and warm, with a maximum temperature of 80 degrees (May 19); and a minimum of 40 (May 19). There was a precipitation of 0.16 inch on the night of the 16th. More rain is needed, as the soil is becoming dry and hard; however, field crops, especially the cereals, have apparently not yet suffered from lack of moisture. Work on the rice bog has been completed and it is now ready for seeding.

KANSAS:

Hays Branch Station. May 16. The following report covers conditions during the past two weeks:

Maximum temperature for this period was 89 degrees (May 11); average maximum, 70. The minimum temperature was 29 degrees; average minimum, 44.1. With the exception of a few warm days, the weather during the two weeks has been cloudy, cold and generally unfavorable to the germination and growth of corn and grain-sorghums. It has, however, been very favorable to the growth and development of winter wheat and to the germination of the alfalfa and sweet clover that have been seeded on the station, and also quite generally in this locality. There was precipitation on May 2 and 3, and it is raining today.

After the rain of May 3 warm weather prevailed, and the ground on which the small seedings of wheat, oats, barley and flax were to be made was worked down smooth and the seeding was done on May 6 and 7. The varietal test of corn on the bottom land was planted on May 8, an increase seeding of three acres each of Freed sorgo and Peterita was made on May 9, and the upland planting of the corn varieties on the 11th. On May 12 the early seeding in the date-of-seeding test with the five var-

ieties of grain-sorghums was made. This work would have been done several days earlier but for the wet condition of the field.

COLORADO:

Akron Field Station. May 16. The highest temperature of the season was recorded on Sunday, May 10, and on two nights during the past week the minimum has been 32 degrees. Precipitation for the week, 1.13 inch. Planting of the remainder of the nursery has been delayed by the cold and rain. Nearly all the seedlings appear vigorous, and the wheat plats are nearly all trimmed. Weeds have grown rapidly.

SOUTH DAKOTA:

Highmore Substation. May 16. Weather conditions during the past five days have been excellent for sowing. With the exception of the millets, all seeding is completed in the nursery. The grain-sorghums will be sown early next week as the soil is warming rapidly and contains plenty of moisture. All grains are doing well and excellent stands are general.

State Experiment Station (Brookings). May 13. Mr. Champlin reports that all seeding and other work is progressing well, and that up to the present there is an abundance of moisture in all parts of the State. Kaoliang is attracting widespread interest this season and will probably be a common crop from now on in the western part of the State. It is felt that good progress is being made in increasing other varieties that have proved best in the tests.

NORTH DAKOTA:

Dickinson Substation. May 16. Maximum temperature for the week was 73 degrees; minimum, 23. Precipitation was 1.3 inch, which came in the form of rain and snow on May 10 and 11. Notes which have been taken on the stands show about 50% survival of winter wheat, or a present stand of 200 to 300 thousand plants per acre. The spring wheat, oats and barley stands vary from 500 to 600 thousand plants per acre.

Williston Substation. May 18. Maximum temperature for the week, 83 degrees; minimum, 20 (May 12). The frost did not seem to damage any of the grain that had emerged. The leaf-tips of the wheat, oats and barley were slightly touched, but the first planting of flax, which was an inch high, showed no indication of being injured. Precipitation for the week, 0.26 inch. The ground is in condition for ideal germination and so far all seedings which have emerged have good, uniform stands. Except for flax, corn and prosos, seeding is completed. Over 100 different strains of barley have been seeded in duplicate rod-rows. Three seedings in the date-of-seeding tests with wheat, oats, barley and flax have been made, on April 15, May 1 and May 16, respectively, and there will be one more seeding of barley and flax on June 1.

Mr. E. W. Hall, the Better-Farming Agent for this county, reports that farmers in this locality have practically completed their seeding of wheat, oats and barley in spite of the wet, backward spring.

UTAH:

Nephi Substation. May 17. Weather has been generally fair during the past week, with a maximum temperature of 78 degrees (May 10), and a minimum of 31 (May 12). A hailstorm occurred on May 16; precipitation for the week being 0.33 inch. The wind reached a

maximum velocity of 4.8 miles an hour on May 11. All the nursery seedings, including flaxes, have emerged and are making good growth. Fall barleys are beginning to head, but the ground rodents are doing considerable damage. Several attempts have been and are being made to rid plats of these pests. All crops are in a vigorous condition.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). May 20. Weather has been clear and warm, with a maximum temperature of 80 degrees (May 19), and a minimum of 32 (May 15). The only precipitation was a light shower on May 20. All nursery seedings have emerged and are making good growth. Winter wheat seeded among the barberry bushes for rust infection work made a survival of more than 50%, and is growing vigorously at this date. In the experiment of seed treatment for smut, including tests with formalin, "Seedolin", mercuric bichloride, hot water and hot air, all seedings germinated well except those with mercuric bichloride. The 110th-acre plats of rust nursery hybrids were inspected May 19 and are making good, even growth.

CALIFORNIA:

Biggs Cereal Field Station. May 14. A great deal of work has been necessary this spring in order to get the rice land prepared for seeding. All plantings were made under very favorable conditions and good results are expected. The rice plantins on the station are all up and excellent stands have been secured.

Cereal crops in the state are good this season. Barley will soon be ready for harvest in the San Joaquin valley. Harvest in the Sacramento valley will begin about the first of June.

OREGON:

Harney Branch Station (Burns). May 16. Dry weather still continues, the total precipitation for May, to date, being 0.23 inch. The total precipitation for February, March and April was 1.99 inch. The maximum temperature for the past week was 75 degrees; minimum, 26. During the same week last year a killing frost occurred, but so far this year there have been no dangerous frosts. Except barley and flax which are just emerging, all varietal and increase seedings are up and show good stands.

Ten acres of Grimm alfalfa have been planted in rows on land one-half to two-thirds of which is composed of black alkali spots. Alfalfa planted in 1912 and 1913 is showing up well.

WASHINGTON:

State Experiment Station (Pullman). The co-operative cereal disease work is being carried on under the immediate supervision of Mr. H. M. Woolman. Notes will be received from this station during the season.

May 12. Mean temperature for April, 47.4 degrees; maximum, 70; minimum, 25; mean high, 56.8; mean low, 33.0. Precipitation, 1.29 inch. All spring wheat has been seeded, except some small smut-experiment plats. Corn is being planted.

Conditions this spring in the Palouse region have been of the best for the growth of cereals and all hardy crops. Winter wheat is in fine condition. Spring wheat, oats and peas are also doing well.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

MAY 29
1914



May 29, 1914.

OFFICE NOTES.

The Office has a Baby Vibrator thrasher in good condition for thrashing any grain except rice, which can be sent to any field station in need of such a machine.

Both field and office men are requested to send in as promptly as possible any special data which they wish incorporated in their authorizations for the new fiscal year.

A smutted head of rye was found at Dickinson, N. Dak., last year. This spring two similar heads were found at Mr. Warburton's place in Virginia. It is desired that all field men watch their rye plats closely and that any smutted heads found in them be sent to Dr. Humphrey, who wishes them for experimental work. The smut has been found on both spring and winter rye.

NOTES ON RICE CONDITIONS IN LOUISIANA AND TEXAS.

Reports from Louisiana and Texas indicate that the stands of early plantings are good, but it is hard to estimate how much acreage is up to a good stand. It is thought that the heavy rains will curtail the acreage, but the extent of the reduction can not be determined for at least two or three weeks. The larger part of the rice crop of 1914 will certainly be harvested at a very late date.

FIELD NOTES

VIRGINIA:

Arlington Experimental Farm. May 27. Maximum temperature for the week was 96 degrees (May 26); minimum, 44 (May 20). There has been no precipitation. With the

exception of a few late varieties, winter wheat and oats are fully headed. The warm, dry weather is hastening the ripening of the winter barleys, and the plats of Arlington Awnless will be ready for harvest before the end of the week. A number of perennial rice plants were brought from the Government green-houses in Washington and transplanted in the rice plats on May 22. On the 25th, 100 wild rice plants were also transplanted to the plats, from the large marsh located about one-half mile south of the farm.

Work on the new concrete building, part of which is to be assigned to the work of this Office, is progressing rapidly, and it is quite probable that it will be available for use during part of the current season.

TEXAS:

Amarillo Cereal Field Station. May 20. There has been plenty of rain and the ground is thoroughly soaked. The prospect for a good crop of small grain is better than it has been for a number of years.

NEW MEXICO:

Tucumcari Field Station. May 14. At this station of the Office of Dry-Land Agriculture a limited number of cereal varieties, including grain-sorghums, are being grown by Superintendent Mundell, who sends the following report on conditions there:

Cloudy weather has prevailed the past two days and there has been nearly 0.5 inch of rain. Nearly all grain-sorghum varieties have been seeded and a good stand has been secured on most of the plats. The spring wheat and oats are growing rapidly and there is plenty of moisture in the soil to continue growth for some time. The wheat on some of the plats is now from 8 to 10 inches high, this growth having been made since the grain was seeded on March 14. The prospects are exceedingly good at this time for a heavy crop this season.

KANSAS:

Hays Branch Station. May 23. Weather during the week has been cold and cloudy, with a maximum temperature of 80 degrees; average maximum, 70; minimum, 50; aver-

age minimum, 55.8; and mean, 62.9 degrees. The soil has been too wet to work satisfactorily. The field of rye for green manure is nearly all plowed. The grain-sorghum ground is ready for planting, but the work has been delayed by rain and lack of machinery. The 36 small packets of flax were killed by overtreatment, few plants having emerged. The larger varietal plats have made poor stands due to too deep planting of the seed. The ground on which they were sown had been worked to prevent soil blowing and was in a very loose condition. One of the best crops of wheat since work on the station was begun is anticipated. Fallow wheat is just beginning to head. Neighboring fields of wheat on continuously cropped land have the appearance of being more fully developed. This is probably because farmers as a rule seeded earlier for the sake of early fall and winter pasture.

COLORADO:

Akron Field Station. May 23. The weather has been warm, with a maximum temperature of 80 degrees, and a minimum of 46. Precipitation, 0.03 inch. Grains have made good growth, and winter rye is heading. Winter wheat, which was thinned by injury from spring winds, is stooling well. Seeding of the nursery and trimming of plats is nearing completion.

WYOMING:

Chevenne Experiment Farm (Archer). May 23. Maximum temperature during the past week, 77 degrees; minimum, 40. Precipitation, 0.19 inch. The growth of all cereals has been quite rapid because of the warm weather and available moisture. All seeding was completed on May 21; flax, posos, corn, grain-sorghums and potatoes being planted during the past week.

Winter rye on the Dry-Land Agricultural rotation plats is beginning to head at a height of 18 to 20 inches.

About 3000 small trees were planted on May 15 and 16. Two hundred and forty acres of land have been fenced for cow pasture.

SOUTH DAKOTA:

Highmore Substation. May 23. At no time this season has the soil dried more than an inch below the surface and the numerous light showers easily penetrate this, keeping the soil in good condition. Cool, cloudy weather has been general, thus preventing rapid evaporation. All crops are looking well and during the past week growth has been rapid. Planting of the grain-sorghum nursery was delayed by a precipitation of 0.3 inch last night.

NORTH DAKOTA:

Dickinson Substation. May 23. Maximum temperature for the week was 78 degrees; minimum, 36; precipitation, 0.26 inch. All grain is making rapid growth, although the available moisture is not deeper than 18 inches. The present crop is practically dependent upon the precipitation that will occur during the next two months.

On May 22, Mr. Clark went to Mandan and made about 150 nursery seedlings of flax. The varietal plats of flax were sown on the 14th and emerged on the 21st, with excellent stands. The plats are 1/20th-acre in size and the varieties are sown in duplicate. The farm work in general on the Northern Great Plains Field Station was in good condition and well advanced, over 100 acres being already planted.

CALIFORNIA:

Biggs Cereal Field Station. May 16. Maximum temperature for the past week, 91 degrees (May 13); minimum, 49 (May 11). The weather has been favorable for the germination and growth of rice. The crop looks better than it did last season at this date.

State: The commercial plantings are later this year than last. Only about one-third of the acreage of rice in California was watered before May 15. Approximately one-third of the acreage will be watered about May 22 and some of it not until about June 1.

Yuma Experiment Farm (Bard). May 19. A co-operative experiment with flax varieties is being carried

on at this station of the Office of Western Agricultural Extension, on which Superintendent R. E. Blair makes the following report:

The flax varieties were seeded on March 27, which would seem to be about the best date in this climate. With a few exceptions, a fair to good germination was secured. No plants were obtained from C. I. No. 17. Although the height of the various selections now ranges from 5 to 8 inches, C. I. Nos. 25, 36, 37, 39, 40, 41, 42 and 44 are already flowering.

UTAH:

Nephi Substation. May 23. Weather during the week has been generally fair, with a maximum temperature of 85 degrees (May 21), and a minimum of 41 (May 19). Precipitation, 0.04 inch. The wind reached a maximum velocity of 4.2 miles an hour on May 22. Winter and spring crops are looking well, and good stands have been obtained on both the field plats and the nursery. The winter cereals are rapidly coming into boot.

The alfalfa has made very little headway the past ten days as a result of a frost which occurred on May 4. Corn and peas in rotation have emerged and are making good growth.

MEETING OF GREAT PLAINS COOPERATIVE ASSOCIATION.

Titles of proposed papers should be sent in promptly. It is hoped to issue a tentative program about June 15. Please give this prompt attention.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

JUN 5
1914

June 5, 1914.

OFFICE NOTES.

Professor A. C. Hartenbower, formerly Director of Extension at the Oklahoma Agricultural College, visited the Office on May 22, on his way to Guam, where he is to take charge of the experiment station conducted by the U. S. Office of Experiment Stations.

Professor Youngblood, Director of the Texas Experiment Stations, visited the office on June 1, and discussed the present status and future plans of the cooperative work at the Beaumont experiment station.

FIELD NOTES.

Some of the field notes which should have appeared in the last issue of the Newsletter, May 29, were necessarily omitted because it was published a day earlier than usual on account of the holiday on May 30.

VIRGINIA:

Arlington Experimental Farm. June 3. Fair weather has prevailed during the past week, with a maximum temperature of 97 degrees (May 27), and a minimum of 46 (June 3). Precipitation for the week has been 0.80 of an inch, of which .71 of an inch occurred on the evening of May 28. Total precipitation for May has been 1.77 inches. The recent rains have been of material benefit to field crops. The harvesting of winter barley in both field and nursery plats will be practically completed before the end of the week. The early varieties of winter oats are ripening rapidly.

TEXAS:

Beaumont Cooperative Rice Substation. May 28.
The following report covers the month of April 27 to May 27:

Maximum temperature for the month was 87 degrees (May 5, 6 and 26), and the lowest maximum, 71 (May 13); minimum, 57 degrees (May 14 and 15), and the highest minimum, 74 (May 27). The wind reached a maximum velocity of 12.08 miles an hour on May 4, and the average velocity for the month was 6.02 miles. During the month there was 1 clear day, 7 cloudy and 22 partly cloudy days. Rain occurred on 17 days, with a total precipitation of 11.79 inches. This heavy rainfall has greatly hindered field work.

Professor A. B. Conner, Agronomist of the Texas Experiment Stations, has been a visitor at the station.

Amarillo Cereal Field Station. May 23. The planting of the grain-sorghums and broomcorn was completed on May 23. The early plantings in the date-of-planting tests have emerged. The stands of Dwarf kafir and feterita are thin, but those of the other varieties are very good.

May 30. Maximum temperature for the week, 85 degrees; minimum, 55; precipitation, 0.71 inch. There were several showers during the week and the weather conditions have been ideal for plant growth. All winter wheats are in full head and are flowering. Spring wheats and oats are heading. Grain-sorghums which were planted on May 23 are emerging and indications are that a good stand will be obtained.

Climatic conditions at present are more favorable to crop growth than they have been for several years. Predictions of a heavy wheat crop in the Panhandle are general, estimated yields varying from 25 or 30 bushels to 50 bushels an acre.

Mr. H. A. Carleton visited the station on May 28 and 29.

KANSAS:

Hays Branch Station. May 27. All grain-sorghum plantings are completed. The physical condition of the soil is not good and a rain is needed to insure a stand. Crops are beginning to show the lack of moisture. Wheat in the field plats is about 25% headed.

COLORADO:

Akron Field Station. June 2. All seeding has been completed and the work of cleaning out weeds, and of labeling plats and rows, is now in progress. Another heavy rain has occurred and all crops are in good condition.

WYOMING:

Cheyenne Experiment Farm (Archer). May 30. The weather during the past week has been favorable to crop growth, with a maximum temperature of 79 degrees; and a minimum of 38. A precipitation of 0.51 of an inch which occurred on May 27 and 28, insured sufficient moisture for the germination and early growth of the flax, millet, corn and sorghum which are emerging, so that good stands are expected. The 235 lots of wheat received from Mr. Ball were planted in row-rows. Of these a very small percentage of the durum varieties germinated, while the common ones have practically all germinated well. The few remaining winter wheat plats have a healthy, dark green color, and are growing rapidly. The trimming of field plats is in progress.

Alfalfa and sweet clover in wide rows has a much more healthy appearance and is growing considerably faster than that which was close drilled, the latter having a yellowish color.

Winter rye on the Dry-Land Agriculture rotation plats is practically all headed and stands about 30 to 36 inches high.

SOUTH DAKOTA:

Highmore Substation. May 30. Conditions continue to be very favorable for plant growth. A precipitation of 0.37 of an inch, with continued moderate temperatures, has caused rapid development of the crops this week. All crops have been sown except the millets and it is expected to sow these on June 1. Winter rye is heading.

Considerable interest in the work done on the station is being shown by the farmers in both county and state, and visitors are very numerous. On May 27, 50 teachers of the local "Teachers' Institute" spent the afternoon at the station. Every Saturday afternoon during the months of June and July will be allotted to visitors and these dates will be made known through the newspapers, which are always willing to cooperate for the good of the state. Monday, June 15, will be set aside as "Business Mens' Day", it being very important to have the business men of town know something of the work being done. Such publicity is very desirable if the results obtained from experiments are to reach the people who can be benefited thereby.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). May 27. Good growing weather has prevailed during the past week, with a maximum temperature of 93 degrees (May 26); and a minimum of 48 (May 22). There was a precipitation of 0.19 of an inch on May 21 and 0.18 on May 26. Barberry bushes are well infected with stem rust and inoculations are being made in the field both with this material and with greenhouse spore material.

Professor L. R. Jones, Pathologist of the Wisconsin Experiment Station, visited this station on May 20, spent some time in the field, and gave a talk before the pathology seminar on potato diseases.

June 3. Maximum temperature for the week, 84 degrees (May 28 and 31, June 2); minimum, 49 (May 30 and June 1). Total precipitation for the week, 1.2 inches. All grains are making rapid growth, winter rye being headed and

winter wheat swelling in the boot. The alleys throughout the nursery have been weeded, and the plats are now being hoed.

NORTH DAKOTA:

Williston Substation. May 25. Maximum temperature for the week, 82 degrees; minimum, 35. Precipitation, 0.08 of an inch, with frequent traces. The weather has been very favorable to plant growth, and all crops are in excellent condition. Flax was planted in rod rows and in duplicate series in the field plats during the week. Winter rye is heading and winter wheat is between 8 and 10 inches high.

June 1. Weather during the week has been dry and windy, with a maximum temperature of 86 degrees; and a minimum of 33. There was only a trace of precipitation and, although the soil has dried rapidly, none of the crops has suffered as yet. The precipitation for April was 0.49 of an inch and for May 1.14 inches. The normal for these months is 1.23 and 2.26 inches, respectively.

UTAH:

Nephi Substation. May 30. The weather during the past week has been quite warm, with prevailing dry winds, and there has been no precipitation. On account of such conditions the crops are beginning to suffer. Maximum temperature for the week, 84 degrees (May 29); minimum, 35 (May 25). The wind reached a maximum velocity of 6.3 miles an hour on May 24. The winter barleys are almost fully headed and winter wheats are beginning to head. Both grains are in good condition. All spring plowing has been completed.

Potatoes, in both the rotation and varietal tests, are beginning to emerge. Corn and peas are making good growth.

CALIFORNIA:

Biggs Cereal Field Station. May 25. Although the condition of cereal crops throughout the State is generally very good, at the station nearly all the grain seeded was entirely destroyed during the winter by the heavy rains and floods. In the immediate vicinity of Biggs most of the grain on the "dobe" land was badly damaged by the wet winter and most of it is being cut for hay. At Chico the grain work is looking well, and harvesting will begin about June 1. Crops seem in better condition in the San Joaquin than in the Sacramento Valley. The barley crop this year will probably be the heaviest ever produced in California.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

JUN 12
1914

June 12, 1914.

ATTENTION OF FIELD MEN.

The office has a 4 x 5 camera, for films only, which can be sent to any of the field men who would care to use it until such time as a more suitable one can be purchased.

Will the men at the field stations kindly arrange to have their news notes reach the office not later than Thursday of each week, so that they may be incorporated in the issue of the Newsletter of the week immediately following the occurrence of the events reported.

PUBLICATIONS.

U. S. Department of Agriculture Bulletin No. 99, entitled "Tests of Selections from Hybrids and Commercial Varieties of Oats", by Messrs. C. W. Warburton, L. C. Burnett, and H. H. Love, was issued June 8, 1914.

OFFICE NOTES.

Dr. E. M. Freeman, of the Minnesota Agricultural Experiment Station, and Professor John R. Fain, of the Georgia College of Agriculture, visited the office during the week.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. June 10. Maximum temperature for the week, 96 degrees (June 8); mini-

mum, 50 (June 6). Precipitations of .42 and .59 of an inch occurred on June 5 and 8, respectively. The latter was accompanied by high winds, which caused a large amount of lodging in many of the plats of winter wheat and oats where the growth was vigorous. Harvesting of winter oats is now in progress. The grain-sorghums in the environmental experiment were planted on June 5. Four varieties of rice were planted on June 9.

LOUISIANA:

Crowley Rice Experiment Station. June 7. The transplanting of the nursery rices was completed on June 4. The nursery contains 408 one-rod rows. Other rices are up to a good stand and are growing nicely. The planting of soy beans will be completed during the coming week.

TEXAS:

Amarillo Cereal Field Station. June 6. The weather during the past week has been warm and pleasant, except for high winds yesterday and today. The wet weather during part of May caused the rapid growth of weeds and much work has been necessary to keep them under control. All crops are in fine condition except flax, which has grown so slowly that the weeds have nearly destroyed it and it is feared that it will have to be plowed up, although it may be possible to save a few rows of each variety. The small grains are heading rapidly, winter rye and Tennessee winter barley are beginning to turn and will be ready for harvest in a little over a week.

A flag pole was erected at the station on May 29 and the flag was raised for the first time on Decoration Day.

Beaumont Cooperative Rice Substation. June 2. Rainfall from May 27 to 30 totaled 14.87 inches, 10.91 inches of this coming on May 29. It is reported by the canal company that the water is higher than it has been at any time since the Galveston flood. The water was practically off the farm by the morning of May 31 and entirely gone the following day. Considerable work has

been necessary to enlarge and open ditches in order to secure better drainage, and some very effective work has also been done to prevent the water from coming down over the farm from above. The frequent heavy rains have greatly hindered the field work, but with a few days of favorable weather all planting can be finished.

KANSAS:

Hays Branch Station. June 6. Maximum temperature for the week, 90 degrees; average maximum, 84.3; minimum, 57; average minimum, 54 degrees. Precipitation of 1.36 inches occurred on June 1 and 2. Weather during the week has been favorable to all crops. Corn and the early plantings of grain-sorghums have been given their first cultivation and the fallow field has also been cultivated. The regular and special planting of Dwarf Kafir made on May 26 failed to make a stand, so the furrows were cultivated and the plats replanted on June 4. Wheat went down under the steady and prolonged rain of June 1 and 2, but has nearly regained its erect position and is fully headed. Harvest is expected to commence June 20 to 25.

It is reported that the "army worm", "wheat straw worm" and the "Hessian fly" are doing considerable damage in certain sections of the State. Farmers who spread straw during the winter, under the recommendation from the college, report that the wheat is apparently not as good as on neighboring fields where straw was not spread. Conservative farmers are placing the probable average yield of wheat for Ellis County at 15 to 18 bushels per acre, based on the evident shortness of the head. State authorities are estimating the total yield for the State at 120 to 130 million bushels.

COLORADO:

Akron Field Station. June 8. After a short trip through a portion of the state, Mr. McMurdo reports that the cereal crops on the station are further advanced than any seen between Akron and the mountains, which is probably due to the warmer weather which has prevailed.

Winter rye is fully headed and several of the winter wheats and barleys are beginning to head. A recent precipitation of .83 of an inch will aid the continued good growth of the crops, which are nearly all in good condition.

SOUTH DAKOTA:

Bellefourche Experiment Farm (Newell). The following report covers conditions and progress during the month of May:

Total precipitation was 2.22 inches, the greater part of this occurring during the early part of the month. During the latter part there have been hot, dry winds so that rain is again needed, the crops beginning to show the effects of the dry weather and the soil being quite dry to a depth of 3 inches and cracking. Without rain within the next 10 days it will be necessary to water the small grain varieties on the irrigated plats. The prosos have been planted and most of them have emerged. Rye seeded with winter wheat has headed and is in flower, and no smut or ergot has been found in these plantings. All the flax varieties, which were seeded on May 14, have made good stands and are in splendid condition. The nursery material is all looking well and nothing has suffered materially as yet from either the hot winds or drought. The ground has been prepared for the koaliangs which will be planted during the first week of June. All the plats have been lined out and the roads graded preparatory to staking the plats, which will be done soon.

A farmers' meeting was held at the station on May 28, about sixty attending. The program included discussions on rotations, irrigated and dry-land crops, small grains, rice culture and marketing.

Highmore Substation. June 3. During the past week a little over an inch of rain has fallen, which has kept all crops growing well. Early seedings of barley are nearly ready to head, and the early seedings of flax will soon be in bloom. Prospects are very favorable for excellent crops this season.

NORTH DAKOTA:

Dickinson Substation. June 1. Maximum temperature for the past week was 85 degrees; minimum, 35; precipitation, .12 of an inch. The total precipitation for May was 2.55 inches, which is .01 of an inch above normal. All spring seeding was completed last week. The spring grain is stooling well and making good growth for this season of the year. Winter rye is about two feet high and is starting to head.

June 6. Maximum temperature for the week, 85 degrees; minimum, 40; precipitation, 1.52 inches. Three heavy rains occurred during the week, the last being accompanied by considerable hail, which broke several windows but did little other damage. Some run-off occurred during all the rains of the week. All grains are making rapid growth, and winter rye is fully headed.

Williston Substation. June 8. The weather during the week was very hot and dry until June 3 when a precipitation of 1.89 inches occurred. This rain was accompanied by an electrical storm and considerable wind, but no damage was done. Total precipitation since June 1, 3.09 inches. Maximum temperature for the week was 92 degrees; minimum, 46. All crops are in fine condition and the winter wheat is heading.

MONTANA:

Judith Basin Substation (Moccasin). June 1. Total precipitation for May was 2.81 inches, which is a little below normal but greater than that for May, 1913. The weather during the past week has been quite warm, with no precipitation, and all crops have made rapid growth. All seeding has been finished and good stands of the spring crops obtained. Winter wheat is very poor this year. A large amount of winterkilling occurred, and owing to the late seeding last fall the wheat is not so far advanced as is usual at this time. The winterkilling was probably due to late seeding and to the blowing of the soil last winter. Blowing has not occurred before and its

effect was probably aggravated by the late seeding and consequent small growth of the wheat at the time.

IDAHO:

Aberdeen Substation. June 6. The past month was the driest in the history of the State, and most of the dry-land areas have suffered considerably. Because of the drought Turkey wheat started to head prematurely on June 1. The drought was broken on June 2 when .25 of an inch of rain fell. The rain continued on the 3d and 4th, changing to snow on the 5th and giving a total precipitation of 1.55 inches. Following the snowstorm, frost warnings were sent throughout the State; however, the temperature at the station did not go below 32 on the night of June 5. Some parts of the fruit-growing sections of the State suffered severely, however. Frost on May 30 cut the potatoes to the ground, and alfalfa and the cereals were slightly injured. All crops on the station are now in excellent condition. Tennessee winter barley on the dry-land plats started to head on May 23 and was fully headed on June 1, and all Turkey wheat is heading. Owing to the drought the medium-late seedings in the date-of-seeding tests will prove to be the best. The early sown grain made excellent growth at the expense of the available moisture and therefore suffered when the drought came; later seedings not having developed so far were less injured and consequently are now in better condition. The nursery rows of flax have not germinated well, only a few plants being above ground, but the field plantings are in excellent condition.

UTAH:

Nephi Substation. June 6. Stormy weather has prevailed during the past week, with a precipitation of 1.36 inches. Maximum temperature, 75 degrees (June 2); minimum, 46 (June 1). The rainfall which occurred during the week was beneficial to the crops on the Levan ridge, but a heavy snow-storm which occurred on the night of June 5 damaged some of the crops through lodging. Several plats of fall barleys and winter wheats are fully headed. The potatoes on the rotation plats have emerged and are making good growth.

An excursion to the Levan ridge and Nephi Substation from nearby points is being arranged to take place June 15.

OREGON:

Eastern Oregon Dry-Farming Substation. The following report covers weather conditions and crop growth during the month of May:

The temperatures for May have been the highest since the establishment of the station, the maximum being 88 degrees (May 31), and the minimum, 32 (May 27). There were six days on which the maximum temperature was 80 degrees or higher. The mean temperature for the month was 56 degrees, the highest for any previous year being 55. The average maximum was 70.2 degrees, 4.5 degrees higher than the average maximum for May, 1913. The total evaporation for the month was 7.39 inches, exceeding by more than an inch that of last May and being the highest recorded here. The total precipitation for May was only .76 of an inch, nearly half an inch below the normal for the past 9 years. This moisture was of practically no benefit to the crops, as it came on six different dates, the highest precipitation for any one day being .2 of an inch.

The warm, dry weather of the past two weeks has injured winter wheat which was heading. The plats with thick stands on shallow ground are burned so badly that they will probably be complete failures. Most of the winter wheat in the County is thick and is suffering from the drought. Excepting a few of the spring barleys which are now heading, spring grains are not suffering from the lack of moisture as the winter grains are.

WASHINGTON:

State Experiment Station (Pullman). June 2. Maximum temperature for May, 87 degrees; minimum, 33; mean maximum, 68.7; mean minimum, 45; general mean, 55.8. Precipitation, 1.25 inches. The growing conditions during the month have been very good. Wheat is beginning to head and it is estimated that harvest will be nearly a month earlier than in 1913. The last seeding of spring wheat in connection with the smut work was made on June 1.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

JUN 19 11
1914

June 19, 1914.

MEMORANDUM CONCERNING SATURDAY HALF-HOLIDAYS.

The following executive order by the President (No. 1962) dated June 9, 1914, is transmitted for your information:

"It is hereby ordered that from June 15th to September 15th of each year, until further notice, four hours, exclusive of time for luncheon, shall constitute a day's work on Saturdays for all clerks and other employees of the Federal Government, wherever employed; and all executive or other orders in conflict herewith, except the Executive Order of April 4, 1908, relating to certain naval stations, are hereby revoked.

Provided, however, that this Order shall not apply to any bureau or office of the Government, or to any of the clerks or other employees thereof, that may for special public reasons be excepted therefrom by the head of the Department having supervision or control of such bureau or office or where the same would be inconsistent with the provisions of existing law."

ATTENTION OF FIELD MEN.

It is desired that all vouchers, both for travel and station expenses, for the fiscal year 1914, be forwarded so as to reach this office as soon after July 1 as possible. In cases where there is necessary delay in sending in vouchers, a statement of the total amount of outstanding liabilities for the fiscal year should be forwarded to reach the office before July 10. It is imperative that this request be complied with.

The attention of the field men is called to the fact that the seed order cards which have previously been on yellow are now printed on white paper.

MANUSCRIPTS PUBLISHED.

Farmers' Bulletin 586, entitled "Collection and Preservation of Plant Material for Use in the Study of Agriculture," by Messrs. H. B. Derr and C. H. Lane was issued on June 3.

Year-Book Separate 625, entitled "The Grain-Sorghums: Immigrant Crops That Have Made Good," by Mr. Carleton R. Ball, was issued on June 13.

CEREAL HERBARIUM.

Particular effort should be made to make a complete collection of cereal varieties in plats and nursery this season. Where needed, extra labor should be employed for this purpose after July 1. Special care should be taken to fold the specimens so that the length never exceeds 14 inches, as the mounting sheets are only 16.5 inches long and some allowance for slipping must be made. Men needing more driers, folded collecting sheets, presses, or labels should make request for same at once.

SALE OF PUBLIC PROPERTY.

It is requested that when public property belonging to the Bureau is sold in the field a written report giving the date and place of sale and a list of the property disposed of be sent immediately to the office, so that it may be transmitted to the Officer in Charge of Property. This is for the purpose of properly accounting for all Bureau property.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. June 17.
Clear weather has prevailed during the past week, with a

maximum temperature of 97 degrees (June 12) and a minimum of 48 (June 17). There has been no precipitation, and spring-sown crops are beginning to show the effect of the drought. The dry weather has been ideal for harvesting. About two-thirds of the winter oat crop has been cut and the harvesting of winter wheat is now in progress. The wheat crop is unusually heavy and good yields should be obtained as the heads appear to be well filled. Lodging in some of the plats has made the harvesting difficult. The grain-sorghums in the environmental experiment emerged on June 12.

TEXAS:

Amarillo Cereal Field Station. June 13. Maximum temperature for the week, 90 degrees; minimum, 62 $\frac{1}{2}$; precipitation, 0.10 inch; evaporation, 2.33 inches. A strong wind has blown almost constantly during the week, which has dried the surface soil for several inches and is causing the wheat to ripen rather rapidly. Harvesting will begin about June 18. The late planting of sorghums in the date-of-planting test was made June 10. Cowpeas and sorgo were planted for feed, which completed the planting for this season. The weeds are still very vigorous and extra help will be necessary for cutting them, rogueing the grain plats, etc.

Beaumont Cooperative Rice Substation. June 13. Weather during the week has been clear and warm, with a maximum temperature of 94 degrees and a minimum of 70. There was only a trace of precipitation, this being the first week since spring work was started that field work has been possible every day. Preparation of the seed beds and planting have been in progress during the week and will continue during the coming one. Some irrigating has also been done.

KANSAS:

Hays Branch Station. June 13. Weather during the week has been dry, hot and windy, with an average maximum temperature of 88.7 degrees. There was a maximum of 92 degrees on two days and the average minimum temperature

for the week was 63.7. There was only a trace of precipitation. Binding should begin on June 16 or 17, and headers be in operation by the end of the week. All station wheat will be a few days later than that on the surrounding farms. The Maryland plat in the soil exchange will be harvested today. An increase plat of Ivanov winter rye, and the earliest-sown winter wheat in the date-of-seeding test will be ready for harvest on June 15.

Farmers estimate that the average yield of winter wheat in Ellis County will be 17 to 20 bushels per acre. It is reported that the crop has been slightly damaged by the drought of the past ten days.

Professors Call and Cochel and Assistants Thompson and Vestal of the Agricultural College at Manhattan inspected the station on June 12.

June 15. Last night a precipitation of 1.³⁷8 inches occurred, which, as it came slowly and without wind, will improve the condition of all the crops. This rain and the accompanying cool weather will delay harvest, but will cause the later wheat to fill and mature more normally.

COLORADO:

Akron Field Station. June 16. Precipitation of 2.25 inches during the week will aid materially in the filling of the grains. Oats, barley and spring wheat are heading. Some plats had begun to suffer from the dry weather, but have been improved by the recent rain. Weeds have been very bad this year and a great deal of work has been necessary to keep them under control.

It is expected that a picnic will be held at the station on June 24, and all plats are being carefully labeled so that those who attend may know just what they are inspecting.

WYOMING:

Cheyenne Experiment Farm (Archer). June 13. The weather conditions during the past week have been very favorable to crop growth. Maximum temperature, 87 degrees;

minimum, 41; greatest daily range of temperature, 40; precipitation, 0.08 inch; evaporation, 1.844 inches. Although moisture has been quite plentiful this spring, indications are that the supply will soon be exhausted under the present weather conditions and the rate of crop growth. A large number of oat plants, on practically all plats, have a few yellow leaves at the base, but it is thought that this is due to disease rather than to insufficient moisture. Winter wheat is in the boot and the bottom leaves are drying. Winter rye is fully headed and in bloom, and corn is growing rapidly. The stands of flax are rather thin and uneven. Most of the spring cereals were planted on summer-fallowed land, and weeds are numerous on all plats where a thin stand resulted. The trees set out this spring and in 1913 are in good condition.

The annual Farmers' Round-Up will be held at this station on June 16, in order that prospective land buyers may have an opportunity to see what is being done without irrigation in this section. The State will sell some 40,000 acres of school land near Cheyenne at public auction beginning June 17 and continuing until all is sold.

SOUTH DAKOTA:

Highmore Substation. June 13. Precipitation during the week was 1.58 inches. The rain came slowly and was rapidly absorbed by the soil, and as the weather was cloudy nearly all the week very little of the moisture evaporated. This rainfall practically assures a fair crop. The rain prevented the cultivation of crops and the weeds have grown rapidly. All early cereals are heading or in bloom, and the later ones are swelling in the boot. The growth of the late-sown crops, such as the grain-sorghums and millets, has been checked by the wet and rather cool weather.

June 16. Weather conditions so far this week have been favorable for field work, and the weeds are being destroyed as rapidly as possible.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). June 10. Weather during the past week has been

generally warm and cloudy, and conditions have been excellent for the growth of crops. Slight precipitations occurred five times during the week, totaling 1.91 inches. Maximum temperature for the week was 87 degrees (June 7), and minimum, 50 (June 6). Hoeing of the nursery has been completed.

June 17. Maximum temperature for the week, 88 degrees (June 10); minimum, 46 (June 15); precipitation, 0.45 inch. The weather which has been cool and wet, has been favorable to the spread and development of rust. Numerous infections are located throughout the nursery, hand inoculations are still being made, and the plats have been sprayed twice. Barley is heading, and Khapli emmer, C.I. No. 4013, headed on June 13. All nursery plantings are making good growth. Because of the abundant moisture weeds are very numerous.

On June 13 Mr. Parker made a trip through Carver County to observe the condition of cereal crops, and to note cereal diseases and collect specimens of the same. Several fields of winter wheat were in full head, and were in excellent condition. Some leaf rust was evident, but little or no stem rust was present. From 2 to 5 percent of loose smut was observed in every wheat field. Loose smut of barley was very prevalent, there being from 2 to 10 percent in all fields observed. Several typical specimens of the barley "stripe-disease" due to Helminthosporium were collected. Rye was in fine condition and beginning to turn color. A slight amount of leaf and stem rust was observed, and two smutted plants, showing leaf smut, Urocystis occulta, were collected from one field near Carver.

NORTH DAKOTA:

Dickinson Substation. June 13. Maximum temperature for the past week was 71 degrees; minimum, 46; precipitation, 1.05 inches. The cool weather has been favorable to the tillering of all grains, and conditions are now very promising for a good crop. Strong winds which occurred on June 10 and 11 did considerable damage to the environmental and varietal plats of flax, fully 50% of the plants being cut off by the blowing sand. During the week all plats have been weeded, staked, the ends trimmed, and the alleys cultivated.

Williston Substation. June 15. Maximum temperature for the past week, 77 degrees; minimum, 41; precipitation, 0.79 inch. The precipitation from June 1 to date has been 3.88 inches, which is 0.31 inch above normal for the month of June. All small grains are in excellent condition, winter wheat being nearly all headed and some of the early spring wheats beginning to head. Flax in the field plats germinated well and is in good condition, but that planted in rows has not germinated so uniformly. This was probably due to poor seed of some of the new varieties, and also to a heavy rain which packed the ground immediately after the seed was planted.

IDAHO:

Aberdeen Substation. June 11. Since June 1 there has been 1.9 inches of precipitation, 0.24 of this coming in the form of snow on June 5. Following this snow storm there was freezing weather which did a large amount of damage in the Twin Falls country. The drought during the early spring did considerable damage to the winter wheat. Spring wheat has not suffered at all thus far, and if there is average moisture from now on it will probably make a fair crop.

UTAH:

Nephi Substation. June 13. Weather during the past week has been generally fair, with a maximum temperature of 83 degrees (June 12), and a minimum of 31 (June 6). A precipitation of 0.62 inch occurred during the first part of the week. Maximum evaporation for 24 hours, 0.339 inch (June 12). Crops have recovered from the damage done by the snow storm which occurred on June 5 and are looking well. Winter cereals are more than 50% headed and are from 3 to 4 feet high. Spring crops are also in good condition and are making good growth.

It was observed on a trip to Cache Valley that crops in the northern part of the State were looking well. A good harvest is expected.

Mr. S. R. Boswell has been appointed by the State officials as an assistant at the Nephi Substation, and commenced work on June 6.

CALIFORNIA:

Biggs Cereal Field Station. June 8. Rice work is in excellent condition this summer and all plantings look well. The fertilizer and irrigation tests which were begun this spring have been of much interest.

Work has been progressing nicely at Chico. Harvesting began there on May 28 and will probably be completed by the last of this week. Thrashing of the cereals will start next week.

OREGON:

Harney Branch Experiment Station (Burns). June 13. The total precipitation for May was 1.505 inches, which is slightly above the normal; that for June to date has been 0.654 inch. On June 5 a snow storm occurred which covered the ground to a depth of about 3 inches, lasting a short time. On the following night there was a severe frost, the temperature reaching 21 degrees. As a result all tender crops were killed and considerable damage was done to the small grains, field peas, alfalfa, etc. There was a marked difference in the ability of the several varieties of the different crops to withstand the cold. Those showing especial hardiness were Black American oats; Galgalos and Erivan wheat; Svanhals barley; Carleton, Kaiser, Grey Winter, Cossack and Peluschka field peas; Grimm and Baltic alfalfa; and the American varieties of flax. Tennessee Winter barley, which was nearly 50% headed at the time of the frost, was injured so badly that all heads out of the boot and part of those in the boot were killed. The other winter grains were all in the boot at the time and, though there was some damage, it has not been ascertained to what extent the flowers were killed.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

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1914

June 26, 1914.

MEMORANDUM NO. 93.

Relating to Accounts and Records.

June 18, 1914.

Attention is invited to the following Act of Congress approved March 4, 1911, which is self-explanatory:

Extract from Chap. 270--An Act To provide punishment for the falsification of accounts and the making of false reports by persons in the employ of the United States. United States Statutes at Large, Vol. 36, pp. 1355-1356.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled. That whoever, being an officer, clerk, agent, or other person holding any office or employment under the Government of the United States and, being charged with the duty of keeping accounts or records of any kind, shall, with the intent to deceive, mislead, injure, or defraud the United States or any person, make in any such account or record any false or fictitious entry or record of any matter relating to or connected with his duties, or whoever with like intent shall aid or abet any such officer, clerk, agent, or other person in so doing; or whoever, being an officer, clerk, agent, or other person holding any office or employment under the Government of the United States and, being charged with the duty of receiving, holding, or paying over moneys or securities to, for or on behalf of the United States, or of receiving or holding in trust for any person any moneys or securities, shall, with like intent, make a false report of such moneys or securities, or whoever with like intent shall aid or abet any such officer, clerk, agent, or other person in so doing, shall be fined not more than five thousand dollars, or imprisoned not more than ten years, or both.

Among the cases which might arise under this act are the following:

(A) Knowingly submitting, certifying or recording accounts covering the cost of materials or services which are stated in such a way as to conceal the real object for which the expenditure was made; as,

(1) Materials or labor for the erection or construction of a building or other public improvement not specifically authorized.

(2) Materials or labor for the repair of private property.

(3) Payment of salaries or purchase of supplies ostensibly for this Bureau but in fact to reimburse co-operators for expenses incurred by them. The co-operators sought to be reimbursed may be other branches of this Department, other Departments, State Experiment Stations, commercial organizations, or private individuals.

(B) Submitting, certifying or recording any account covering the cost of materials or supplies when in fact it is known that the materials were not furnished or the services were not rendered on the dates, or at the prices, or in the manner specified; as,

(1) When materials were not furnished or services were not rendered on the dates mentioned in the vouchers.

(2) When the quantity of supplies or materials was not furnished or the number of days service was not performed as stated in the voucher.

(3) When the quality of supplies or materials furnished is inferior to the standard indicated by the bid, contract, or other agreement of the creditor named in the account.

(4) When the unit prices are not correctly stated.

(5) When the amount actually due is erroneously stated.

(5) Attempting to pay for materials or services in one fiscal year which were actually furnished or rendered in another fiscal year.

(7) Charging to one appropriation expenses actually incurred under another appropriation.

(8) Charging expenses to an authorization or contract which had no real connection therewith when incurred.

(9) When an employee is absent without pay during all or part of the time covered by a voucher, but proper deduction therefor is not made.

(10) Padding reimbursement accounts - false statements covering meals, waiter fees, laundry, pullman accommodations, etc.

(C) Preparing, certifying or submitting any report or statement which is misleading, either by purposely omitting essential facts, juggling figures, or stating as facts what is known to be untrue or not warranted by data at hand; as,

(1) Financial statements not in strict accordance with the records.

(2) Erroneous statements regarding the nature or disposition of money or checks received in the course of official business.

(3) Exigency statements to the effect that articles on contract will not serve the purpose, that competition can not be secured, or that the price named is the lowest obtainable as ascertained by personal investigation, when in fact the difference between the article on contract and the one desired is simply a matter of personal preference, or competition can be secured but would involve some delay, or no personal investigation as to the price was made.

(4) Splitting requisitions or orders to evade the regulation requiring competition or exigency statements where the amount involved is fifty dollars or more.

(5) Submitting false statements regarding the condition, loss or destruction of articles of public property, or failure to enter or report changes in the status of public property on the inventory. Also the custody, issuance, and use of office, laboratory and field supplies.

(6) Knowingly misrepresenting facts in statements regarding any project or investigation for the purpose of misleading or deceiving administrative officers or the public.

Any official statement in writing regardless of its form is a "record" within the meaning of the act and all employees of the Department concerned in its preparation, certification or authentication, knowing it to be false, can be held responsible.

(Signed) B. T. Galloway.

Acting Secretary.

PHOTOGRAPHS NEEDED.

The office has frequent need of good photographs of a number of subjects not fully represented in its files. Among these are farm views showing the different cereals, and of farming operations concerned with cereal production, as follows: Breaking; plowing with different types of plows; harrowing with different kinds of harrows; disking stubble, stalks, and plowed ground; listing; cultivating with different implements; harvesting with binder, header, and combine; harvesting grain-sorghums with row binder and header; shocking; shocked fields of different grains; stacking; stacks and ricks; thrashing from the bundle, from the shock, from the header, from stacks and with the combine. Farm scenes are preferred, especially of the crops, but views of operations on the experiment stations can be used. It is hoped that the field men will be able to obtain many such photographs during this season.

RECEPTION FOR DR. GALLOWAY.

To afford an opportunity for members of the Department of Agriculture and their families to take leave of the Assistant Secretary, an informal gathering will be held in his honor at the New National Museum on Friday evening, June 26, from 8 to 11.

ATTENTION OF FIELD MEN.

A number of articles have been taken off the inventory this year, such as pamphlet filing cases, letter openers, letter files, thermometers, paper weights, sponge cups, ink wells, etc.

OFFICE NOTES.

Mr. Carleton returned on Saturday morning, June 20, from a trip through Texas, Oklahoma, New Mexico and Kansas.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. June 24. Warm weather has prevailed during the past week, with a maximum temperature of 93 degrees (June 23); and a minimum of 52 (June 18). There have been frequent showers, which have given a total precipitation of 0.97 inch. The hot, humid weather has hastened the ripening of the late-maturing winter wheats. The harvesting of winter wheat in the field plats was completed today, and that of the nursery is progressing rapidly. The harvesting of winter oats

in the nursery was also completed today. Thrashing will start in a few days.

About 100 members of the American Seed Trade Association, which has been holding a convention in Washington, visited Arlington Experimental Farm on June 25.

LOUISIANA:

Crowley Rice Experiment Station. June 13. The weather has been extremely warm and dry during the past week, the lowest temperature, 89.5, occurring on the 7th, and the maximum temperatures on the other days being as follows: 93, 93, 94, 94, 95.5, and 92.5. Rain is much needed for the cultivated crops and for germinating the late-sown rice.

In the vicinity of Crowley some farmers are still sowing rice, which is unusually late.

TEXAS:

Beaumont Cooperative Rice Substation. June 20. Maximum temperature for the week was 94 degrees; minimum, 71. Precipitation occurred on four days and totaled 2.49 inches. The week has been spent in preparation of the land, planting and cultivating. Some irrigation and drainage work has also been done.

WYOMING:

Chevenne Experiment Farm (Archer). June 20. The weather during the past week has been favorable for crop growth, with a maximum temperature of 90 degrees and a minimum of 46. On June 14, 0.67 inch of precipitation, in the form of rain and hail, fell in about 10 minutes. The hail injured young corn leaves and wide-leaved plants considerably, but the damage was not serious, except in retarding the growth of the crops. Winter wheat is practically headed; and Blackhull barley (C.I. No. 878), Svanhals barley (C.I. No. 187), and the earliest seeding of Kherson oats (C.I. No. 459), are heading. Winter rye, sweet clover,

brome grass, and alfalfa were cut on June 18 and 19. Sweet clover made good growth but alfalfa and brome were very short. There has been a large growth of weeds this year, lamb's quarter and Russian thistle being especially vigorous.

The Annual Farmers' Round-Up was held at the station on June 15, about 150 farmers being present. A few addresses were made, and refreshments were served by the State Farm Board.

SOUTH DAKOTA:

Highmore Substation. June 20. Weather conditions during the past week have been favorable for crop growth, the days having been sunny and the nights warm. Precipitation of 0.1 inch occurred last night and today is cloudy. This is the first time this week that field work has been interfered with by the rain. Early wheat, oats, and barley are entirely headed. Winter rye promises an excellent crop and can probably be harvested by the 4th of July. There was considerable winterkilling in the winter wheats; those few which did survive are just beginning to head. Only a few plants of any of Mr. Salmon's winter wheat selections have survived. Plants selected from C.I. No.3130 have a survival of 35 percent, which is about twice that of any other variety.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). June 23. Weather during the past week has been cool and cloudy, with frequent rains and heavy dews. The temperature has been below normal, maximum being 85 degrees and minimum 44. Rain has fallen on five days, with a total precipitation of 1.32 inches. A few wheat varieties and hybrids are heading, and some crosses will be made this week.

A recording soil and air thermograph and a wind gauge have been installed in the cereal disease nursery.

Mr. A. G. Johnson, of the University of Wisconsin, visited the station on June 19 and 20.

NORTH DAKOTA:

Dickinson Substation. June 20. Maximum temperature for the week was 91 degrees; minimum, 47; precipitation, 1.45 inches. The precipitation to date for June is 4.10 inches, which is 1.28 inches more than the normal for the month and brings the precipitation for the year to a little more than normal. Early oat and barley varieties, as well as winter wheat, are beginning to head.

Williston Substation. June 22. Maximum temperature for the week, 82 degrees; minimum, 46; precipitation, 0.71 inch. The weather has been moderate with cool nights, too cool for corn but very favorable for all small grains. Winter wheats are headed, and many of the spring wheats and oats are heading, all at a good height.

Conditions are very favorable throughout this section of the State for large yields.

MONTANA:

Judith Basin Substation (Moccasin). June 15. There continues to be plenty of moisture, 1.34 inches of rain falling during the past week. All crops are making good growth. Last year flax started to bloom about July 5, but this year it is about ten days earlier and under normal conditions should be in full bloom about July 1.

UTAH:

Nephi Substation. June 20. The weather during the past week has been generally fair with a maximum temperature of 90 degrees (June 18), and a minimum of 44 (June 13). A slight thunder storm occurred on June 19. Nearly all winter cereals in field plats are fully headed and are beginning to ripen rapidly. Winter barleys, Tennessee, Turkestan and Gatami, are over 50 percent ripe. Spring cereals are in good condition and are making good growth. Spring oats have begun to head.

A large crowd visited the station on excursion day, June 17. On June 15, Dr. F. S. Harris, Agronomist, Utah

Experiment Station, Dr. R. J. Evans, State Leader of Farm Demonstration Work, and Dr. David Sharp, jr., Farm Demonstrator, inspected the experimental work at the station.

CALIFORNIA:

Biggs Cereal Field Station. June 13. Weather the past week has been rather cool for rice, with the exception of the past two days, during which time a maximum temperature of 97 degrees has been recorded. Rice on the station is growing nicely and looks well. A great deal of work has been necessary to eradicate the grasses and weeds, canary grass being particularly troublesome.

The California rice crop as a whole is late, but the general condition of the crop is very good at this time.

WASHINGTON:

State Experiment Station (Pullman). June 15. The temperature for the first week of June was considerably below normal, maximum being 75 degrees (June 2), and minimum 31 (June 5). Precipitation, 0.45 inch. The second week was warmer, with a maximum of 79 (June 14), and a minimum of 38 (June 10). There was no rain. The growth of corn has been greatly retarded, but other cereals are in fine condition, winter wheat being nearly headed. All but the latest fall planting in connection with seed treatment for smut are in full head and indicate that no chemical treatment tried is as satisfactory as copper sulphate and formaldehyde. A casual inspection of the periodic plantings of smutted and untreated wheat (Hyb. 143) gives the following approximate results:

<u>Date of Planting</u>	<u>Percentage of Smut</u>
July 28	.10
Aug. 11	.10
" 20	.10
Sept. 1	.10
" 10	1.00
" 15	5.00
" 22	75.00
" 30	90.00
Oct. 13	98.00

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VOLUME VI

JUL 2
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July 2, 1914.

MANUSCRIPTS PUBLISHED.

Farmers' Bulletin 596, entitled "The Culture of Winter Wheat in the Eastern United States," by Dr. C. E. Leighty, was issued on June 20, 1914.

OFFICE NOTES.

Mr. Charles H. Clark left Washington on June 30 for a three-month trip throughout the flax-growing states. He will conduct investigations and breeding experiments in flax at different field stations, and will also confer with linseed oil manufacturers.

Mr. C. R. Ball left Washington on July 1 for an extended trip throughout the western states, for the purpose of investigating methods of western wheat culture and inspecting the cereal work at the field stations. He will also attend the meeting of the Great Plains Cooperative Association at Hays, Kansas, July 8 to 10, inclusive, and on July 17 will conduct a conference at the Graduate School of Agriculture at Columbia, Missouri, on the subject "Methods of Instruction Relating to Field Crops."

On July 1, Mr. C. W. Warburton started on a trip through the West Central and Northwestern states, where he will inspect experimental work in the improvement and production of oats, and will consult oat growers.

SPECIAL MEMORANDUM NO. 8.

July 2, 1914.

Recent occurrences which have come to the notice of the Cerealists make it desirable to warn all field men

connected with the Office of Cereal Investigations to avoid as far as possible any connection with conventions, farmers' picnics, and similar meetings at which misleading information of any kind is liable to be given to the public concerning yields of different crops, involving statements evidently intended to boom real estate or giving crop possibilities not yet justified by sufficient experiments.

Where men of this Office are themselves farm superintendents or are in any other way directly responsible for these meetings, particularly if held on the station farm, such meetings should not be arranged for until it is made clear to this Office that they are to be of the proper nature. In cases of a difference of opinion with the co-operating agency, the matter should be submitted to this Office for adjustment.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. July 1. The intense heat which had continued for over a week was broken June 28 by a succession of severe electrical storms accompanied by a precipitation of 2.21 inches, and cooler weather has prevailed since. Total precipitation for the week was 4.53 inches and that for the month to date, 6.69 inches. These rains have been of material benefit to growing crops, but have delayed harvesting and have damaged grain in the surrounding counties in Virginia and Maryland. The harvesting of winter wheat on the station was completed on June 29. Thrashing of winter oats and barley is now in progress.

LOUISIANA:

Crowley Rice Experiment Station. June 20. Hot weather has prevailed during the entire week, and rain is needed for cultivated crops and for swelling the streams for irrigation. So far this season conditions have been excellent for cultivated crops, especially corn. This

crop is in very good condition, and with a little rain within the next few days good yields will be secured.

TEXAS:

Amarillo Cereal Field Station. June 27. Weather during the past week has been dry and warm, with a maximum temperature of 100 degrees on June 25. A precipitation of .43 inch occurred the night of the 20th. Grains are ripening very rapidly. All winter grains except emmer, all spring oats, and most of the common spring wheats have been harvested, and it is expected to finish the harvesting of all small grains next week.

OKLAHOMA:

Woodward Field Station. June 20. The weather has been very warm and windy. The maximum temperatures for June 18, 19 and 20 were 95, 100 and 98, respectively. Sorghums and broomcorn are in very thrifty condition and growing nicely, the plants being from 15 to 18 inches high. The stands of feterita and kafir are rather thin, while that of the milos and kaoliangs is thicker. Thinning of the broomcorn is in progress. With the exception of the spring varieties of small grains all crops on the station are in good condition. Spring wheat and barley are very poor and will yield only from 2 to 4 bushels an acre and in some cases even less. Oats are in better condition and will possibly yield from 8 to 10 bushels per acre.

June 25. The weather continues hot and windy, and without immediate rain the crops will be damaged. The thinning of the grain-sorghums and broomcorn has been completed and they are in very good condition.

COLORADO:

Akron Field Station. June 27. Maximum temperature for the past week was 93 degrees; minimum, 47. The heat, with accompanying high winds, is causing the soil to dry out very rapidly. The late-sown plats of wheat, oats, and barley will be fully headed within a short time and

prosos have begun to head. Most of the grain-sorghums have fairly good stands and are making rapid growth. Weeds have choked out the flax in the field plats so that it can not be harvested but will be plowed under. The collection of herbarium samples will be commenced next week.

Between twelve and fifteen hundred people attended the annual picnic at the station. Much interest was manifested in the growth of the cereal work.

WYOMING:

Cheyenne Experiment Farm (Archer). June 27. The weather during the past week has been hot and dry, with a maximum temperature of 83 degrees, and a minimum of 43. There has been no precipitation and the crops are in need of moisture. An average hourly wind velocity of 25 miles on June 25 did some damage to late-sown crops. Spring varieties of durum wheats are beginning to head. Oats are in poor condition and barley is fair. This season there was ample moisture until June 15, and it is supposed that the plants have been feeding near the surface and have failed to send their roots down into the sub-soil, so that the present dry weather is causing them to wilt very rapidly. Practically all leaves on the winter wheat plants have dried up, and prospects for a fair cereal crop are decreasing rapidly.

SOUTH DAKOTA:

Highmore Substation. June 27. Weather during the past week continued dry, with hot south winds, until the night of June 25 when a precipitation of 0.52 inch occurred accompanied by an extremely high wind. The crops were being injured by the heat. The early varieties of wheat such as Ak (C.I. No.3075), Kara (C.I. No.3078) and Manchuria (C.I. No.2492); White Smyrna (C.I.No.195), Gatami (C.I. No.575) and Arlington Awnless (C.I. No.702) barleys; and Sixty Day (C.I. No.135) and Sixty Day Selections (C.I. Nos.325 and 326.) oats; together with the early dates of seeding are all safe from burning, but the later varieties just emerging from the boot are "tip burned." The cool weather which has followed the rain will help the later varieties. The heavy wind which accompanied the rain last night blew down the grain-sorghums and caused considerable lodging in one plat of Gatami barley, but this injury will probably not be permanent.

NORTH DAKOTA:

Dickinson Substation. June 27. Weather during the past week has been cool and rainy, with a maximum temperature of 80 degrees and a minimum of 43. There have been 3.02 inches of rain, making the total precipitation for June to date 7.12 inches. This is the largest precipitation which has occurred in any one month during the twenty-two and a half years that the records have been kept. Spring wheat is over 2 feet high and many of the varieties are beginning to head. Manchuria (C.I. No.2492) is the earliest variety and is 50 per cent headed. Gatami barley, and Sixty Day and Kherson oats are also 50 per cent headed.

Williston Substation. June 29. Weather during the week has been very rainy, with a maximum temperature of 77 degrees, and a minimum of 44. There have been showers nearly every day giving a total precipitation of 3.24 inches. The precipitation for the month to date is 7.83 inches, while the normal for June is only 3.57. The rain has prevented field work, and alfalfa which was cut during the first part of the week is still lying in the field. Winter wheats have headed, and early varieties of oats, and most of the barley varieties are heading. In the nursery spring wheats are heading, but Manchuria (C.I. No.2492) is the only one heading in the field plats.

MONTANA:

Judith Basin Substation (Moccasin). June 22. The weather during the past week has been warm, with a maximum temperature of 80 degrees and a minimum of 45. There has been no precipitation. All crops have made very rapid growth, the early seeding of winter wheat and 2 varieties of barley, Beldi (C.I. No.190) and White Smyrna (C.I. No. 195), starting to head. In the flax nursery, C.I. Nos. 33 and 34 are beginning to blossom. These two varieties have made more rapid growth than any others and are several inches taller. During the past week disease has appeared on the flax in the field plats, and specimens of this have been forwarded to Dr. Humphrey, cereal pathologist, for identification.

IDAHO:

Aberdeen Substation. June 27. Maximum temperature for the week was 93 degrees; minimum, 30. Frost on June 22 cut potatoes to the ground and damaged all crops to some extent. Alfalfa which was in bloom was injured to such an extent that the seed industry for this year will be practically a failure. Turkey wheat seemed to be the least damaged of all crops. Tennessee Winter Barley was harvested on June 26.

UTAH:

Nephi Substation. June 23. Mr. Ellison gives the following report on the growth of flax at the station:

The flax seed was received in good condition, planted on April 4, and emerged on April 12. The 19 varieties emerged quite evenly and have since made fair growth. They are now from 5 to 12 inches tall and apparently in good condition. A few of the varieties have commenced to bloom. A few rows were planted adjacent to an alfalfa field and during the past week the plants have been completely stripped of their leaves by the "alfalfa looper."

June 27. Weather has been generally fair during the week, with a maximum temperature of 89 degrees (June 27), and a minimum of 37 (June 25). The precipitation for the week is 0.08 inch, and the maximum evaporation for 24 hours, 0.482 inch. Winter wheats are turning rapidly and the grain appears to be filling well. Spring grains are beginning to head and are in a vigorous condition. One plat of winter barley, Turkestan (C.I. No. 711), was harvested on June 27, and other varieties will be ripe in a few days.

Some alfalfa has been cut and good yields were obtained. Field peas and potatoes in the varietal tests are flowering, and are in excellent condition.

CALIFORNIA:

Biggs Cereal Field Station. June 21. Weather during the past week has been warm, but favorable for the growth of rice. The maximum temperature for the week was 107 degrees (June 16); minimum, 58 (June 16).

Good stands have been obtained on the majority of the commercial plantings of rice in the Sacramento Valley.

OREGON:

Harney Branch Station (Burns). June 23. Maximum temperature for the past ten days, 97 degrees (June 18); minimum, 28 (June 22). Precipitation for this period, .02 inch. The crops are making very good growth. Winter grains are from 50 to 100 per cent headed. Sixty Day oats and early-sown Swanneck barley are beginning to head. Early-sown flax is blooming, as are field peas and alfalfa.

A survey of the country surrounding the Station shows that about 95 per cent of the fall-sown rye was killed by the frost of June 5 and that an average of 50 per cent of the winter wheat was frozen at that time. The rye was headed and the wheat was in the boot. A frost on June 28 did little damage, just touching the corn, potatoes and some of the more tender crops and frosting the foliage of some varieties of grain. Some heads of winter grains were killed.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

JUL 10
1914

July 10, 1914.

MEMORANDUM.

The following memorandum, dated July 1, 1914, has been received from the Chief of the Bureau:

"The following limitation with respect to per diem allowances in lieu of subsistence is contained in the Sundry Civil Appropriation Bill which has passed the House and is now before the Senate:

'Sec. 13. That the heads of executive departments and other Government establishments are authorized to prescribe per diem rates of allowances not exceeding \$4 in lieu of subsistence to persons engaged in field work or traveling on official business outside of the District of Columbia and away from their designated posts of duty when not otherwise fixed by law.

For the fiscal year nineteen hundred and sixteen and annually thereafter estimates of appropriations from which per diem allowances are to be paid shall specifically state the rates of such allowances.'

In anticipation of the passage by Congress of this limitation, all traveling men whose letters of authorization prescribe a per diem rate higher than \$4 in such cities as have unusually high hotel rates, should be advised of the proposed limitation at once in order that they may be prepared to obtain subvouchers for lodging, etc., in these cities upon the passage of the limitation; and it will then be necessary to amend their letters of authorization so as to provide that actual subsistence expenses not to exceed \$5 per day be allowed in such cities."

NOTE TO FIELD MEN.

It will be appreciated by the field men that it was impossible to send out authorizations and transportation requests soon enough to reach them before it was necessary to perform travel early in July, since these authorizations could not be signed until July 1, and transportation requests could not be issued before that date. In some instances we were unable to obtain the transportation requests until several days after July 1. As prompt attention as possible was given to the issuance of the authorizations and transportation orders by each of the offices having anything to do with them. As the delay was foreseen, copies of our requests for authorizations, made out in June, were sent out, in order that each field man might be fully informed regarding his authorization for 1915 work.

OFFICE NOTES.

Mr. H. V. Harlan left Washington on the evening of July 4, for an extensive field trip through Wisconsin, Minnesota, Kansas, Nebraska, North Dakota, Montana, Idaho, Wyoming, Colorado and Iowa. He will inspect the barley work at field stations in the above named states, and will spend some weeks in personally conducting the barley breeding experiments at University Farm, St. Paul, Minn.

On July 3, Dr. H. B. Humphrey, left Washington for a trip through the western states, for the purpose of consulting plant pathologists, making field and nursery observations, taking notes at different field stations, and collecting cereal disease specimens and fungus cultures.

The office is this year conducting rather extensive cooperative cereal disease studies with the Wisconsin State Experiment Station. At present the work is confined

entirely to the investigation of the diseases of barley, and is under the immediate supervision of Mr. A. G. Johnson, whose appointment as collaborator was made effective July 1.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. July 8. Cool, cloudy weather has prevailed during the past week, with a maximum temperature of 84 degrees and a minimum of 59. The grain-sorghums in the environmental experiment were thinned on July 2, and are in very good condition, as are other cultivated crops. A number of the earlier varieties of flax are beginning to ripen. The perennial and wild rices have made very vigorous growth during the last two weeks, and the wild rice is beginning to head.

LOUISIANA:

Crowley Rice Experiment Station. June 27. Hot, dry weather continues. The maximum temperature has been below 90 degrees only once since June 9. Since June 3, when there was a precipitation of 0.88 inch, there have been no beneficial rains. Crops are drying up and even the native grasses are parched in places. The water in the rice fields is very hot.

TEXAS:

Beaumont Cooperative Rice Substation. June 27. The precipitation for the month ending June 27 amounted to 17.23 inches, of which 14.37 inches fell on May 28 to 30, inclusive. The maximum temperature for this period was 95 degrees; the minimum, 68. A poor stand was secured on some of the plats of the cultivated crops in the rotation tests because of rain which fell immediately after planting.

COLORADO:

Akron Field Station. July 6. Continued dry weather is ripening the grain very rapidly, nearly all field plats of wheat, oats, and barley being fully headed. Some plats are quite badly rusted this year, but so far the damage is confined mostly to the leaves. Smut is not seriously abundant; in a few cases it will probably reach three per cent.

Observations made in the vicinity of the station indicate that there will be heavy crop yields this season. Some rye is already in the stack, and harvesting of wheat has been begun in a few fields. No fields of grain were observed which equaled the station plats.

WYOMING:

Cheyenne Experiment Farm (Archer). July 5. Dry weather has prevailed for the past two weeks and wilting of the small grain crops is very marked. Cultivated crops and flax are withstanding the drought much better than the small grains. The total precipitation for June was 1.12 inches. This came in ten showers, only one of which was heavy enough to be of real value to the growing crops. Flax varieties on the station are beginning to bloom and grains are rapidly heading. All intertilled crops were cultivated during the past week.

Several large fields of flax in the vicinity of the station are only about 3 inches high, being so much less developed than the flax on the station because of the very late seeding. Winter wheat in this section is very short and is turning rapidly. The need of moisture for properly filling the grain is quite general throughout this portion of Wyoming.

SOUTH DAKOTA:

Bellefourche Experiment Farm (Newell). June 30. The following report covers conditions during the month of June:

The maximum temperature for the month was 98 degrees (June 25). Total precipitation during the month was 2.09 inches. On June 11 and 13 heavy rains fell; succeeding showers were too light to benefit the grains. Barley, some of the late-maturing varieties of oats, and spring wheat have suffered greatly from the dry weather, which occurred during the heading period, when moisture was most needed. Sixty Day oats matured much earlier than the other varieties and was not materially damaged. Flax is in full flower at this time and is in good condition. Winter wheats in both the variety plats and the nursery will probably make fair yields, but it is not known whether the spring wheat nursery will survive the drought as most of the rows are just heading. All grains planted on irrigation plats received their second watering June 30.

Highmore Substation. July 1. Weather conditions this week have been very favorable for crop growth. A precipitation of nearly half an inch occurred during the night of June 28. This moisture, with the accompanying cool weather, will aid the late varieties of grain during the blooming period.

July 4. No precipitation has occurred since June 28, but as yet the crops show no signs of injury. If there is no rainfall, however, during the next two weeks yields will be reduced as there is not sufficient moisture to mature a full crop. The barley in triple rows, 6 by 36 inches, is making much better growth than that in the six-inch drills and at present promises to give almost double the yield. Early varieties of barley and oats, and the winter rye are beginning to ripen.

July 5. Following an exceedingly hot and windy day, a precipitation of 1.52 inches was received on June 5. This will be of benefit to the grains which were being injured by the dry weather and hot winds, late-maturing varieties suffering most.

IOWA:

State Experiment Station (Ames). July 7. Mr. Warburton, who arrived at the station on July 3, writes:

On the station farm, the plats of winter wheat and early oats have been harvested. The harvesting of the winter wheat nursery is nearly finished, while the greater part of the oat and barley nurseries are ready for cutting. Winter wheat made a very rank growth of straw and lodged badly. Barley and early oats are good; the later oats have lodged to some extent.

Crop conditions in central Iowa appear to be very favorable. All crops are well advanced. Corn is beginning to tassel. The stand of corn is generally good, and fields are unusually free from weeds. The harvesting of winter wheat is about completed, while early oats are not being cut. Both crops will yield well, though many fields of oats have been damaged somewhat by lodging and by a severe attack of leaf rust.

From July 2 to 4 Mr. J. H. Parker visited the station and took notes and samples in the special oat rust-resistance breeding nursery. Mr. W. T. Craig, representative of the Office of Cereal Investigations at Cornell University, also visited the station on July 3 and 4.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). June 30. Weather has been cool and cloudy, with a maximum temperature of 81 degrees (June 26), and a minimum of 49 (June 28). The dews have been heavy, and frequent showers have given a total precipitation of 2.97 inches. Wheats are heading and all crops are making good growth.

July 7. Maximum temperature for the past week 89 degrees (July 4); minimum, 55 (July 1). There has been no precipitation. Wheats in the nursery are heading rapidly. Leaf rust and smut estimates will be begun this week and spraying with rust will be completed.

Mr. Parker left University Farm on July 1 for Ames, Iowa, to take notes in the oat rust-resistance breeding nursery at the State Experiment Station. From there he will go to Columbia, Mo., to attend the Graduate School of Agriculture, while on leave of absence from the Depart-

ment. During his absence Mr. Potter will be in charge of the cereal disease experiments, having arrived at the farm on June 30 after having spent some weeks at Manhattan, Kans., and Mitchell, Nebr., at which points he conducted similar work.

MONTANA:

Judith Basin Substation (Moccasin). June 29. Precipitation of 2.13 inches occurred during the past week, making a total for June of 4.63 inches. All crops are in good condition and making rapid growth. The early seeding of winter wheat is fully headed, and early varieties of barley and Sixty Day oats are heading. Several of the new varieties of flax are in blossom, and two varieties, C. I. Nos. 33 and 34, are past the blossoming stage and beginning to form bolls. These varieties are from 10 days to two weeks earlier than any of the varieties that have been grown at the station for several years.

IDAHO:

Aberdeen Substation. July 4. Utah Winter barley was harvested July 3. If the present rate of ripening continues, Turkey wheat will be ready for harvesting in a week.

On July 3 "Farmers' Day" was held, over fifty farmers inspecting the work being done on the station.

UTAH:

Nephi Substation. July 6. Maximum temperature for the past week was 94 degrees (June 29); minimum, 47 (June 27). Precipitation for the week was 0.17 inch. Four plats of fall barleys were harvested on July 3. The grain on these plats averaged 37 inches in height. The snow storm which occurred on June 5 caused about 10 per cent of lodging in the barley plats. The extremely warm weather that prevailed during the past week has seriously affected the fall-sown crops, especially Utah Winter bar-

ley, C.I. No. 592. Spring crops are heading rapidly and appear to be in good condition. Flax is blooming and looks well.

OREGON:

Eastern Oregon Dry-Farming Substation (Moro). The following report covers conditions during the month of June:

Weather conditions in eastern Oregon during June were exceedingly unfavorable to crop growth, being very dry and warm. The maximum temperature for the month was 91 degrees (June 15); minimum, 34 (June 20.) The maximum evaporation was .502 inch on June 17. There were 12 days on which the average wind velocity for the 24-hour period exceeded 10 miles an hour, reaching a maximum of 20 miles on the 25th. There has been no precipitation that has been of any benefit to growing crops since April 26, the highest amount for any one day since that date being 0.29 inch (June 23). The total precipitation for the month was 0.66 inch, occurring on seven different days.

All grains are ripening rapidly. All winter barleys, except Utah Winter (C.I. No. 592), are in the shock. Most of the winter wheat varieties will be ready to harvest by July 5 and many of the spring barleys will be ripe a few days later. The winter wheats have suffered most from the dry, warm weather; spring wheat, oats and barley, all of which are now fully headed, have not started to burn as yet. Most of the field pea varieties are also in good condition and give promise of making as high yields as last season.

"Farmers' Day" was held at the Station on June 20 and although the weather was unfavorable 200 farmers attended. In addition to an inspection of the work being done at the station, a two-hour meeting was held at which talks were given by Professors Potter, Powers and Lovett of the Oregon Agricultural College, and several local farmers.

Harney Branch Station (Burns). June 29. Maximum temperature for the past week was 84 degrees; minimum, 32. Precipitation, 0.662 inch. All dependable crops are making very satisfactory progress and good yields are expected.



NEWSLETTER
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BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

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1914

July 17, 1914.

OFFICE NOTES.

Mr. G. H. Godfrey was appointed July 10 as Scientific Assistant in Pathology. His investigations will deal principally with the diseases of rice.

On July 15, Mr. Carleton left Washington for a two-month trip through the Western states for the purpose of inspecting the cereal field stations, and discussing the matter of cooperation at different points.

NOTES ON RICE CONDITIONS IN
LOUISIANA AND TEXAS.

Occasional showers in many districts of the rice belt and heavy rains in some areas during the past week have not only helped the rice crop but have to some extent relieved the canals and wells. On account of the unusual heat and prolonged droughts the evaporation this summer has been excessive and, in consequence, the irrigation plants have been running at full capacity. The general average condition of the crop on the Gulf Coast is very promising and indicative of a good crop. The Mississippi River crop, which will be harvested next month, is very good. In southwestern Louisiana the crop is especially fine east of the Mermentau River. From the Sabine River to the Neches the stands are not good and the outlook is not satisfactory. In Jefferson County, Texas, some planting was done after the fourth of July and quite a large area was not planted until after June 20. In the territory west of Houston there has been a marked improvement in the crop.

FIELD NOTES

VIRGINIA:

Arlington Experimental Farm. July 15. Weather during the past week has been warm and cloudy, with a

maximum temperature of 95 degrees (July 12) and a minimum of 61 (July 9). Precipitation during the week, 0.74 inch. Weeds and grass were removed from the rice plats on July 14. Thrashing of winter wheat is now in progress. The thrashing of winter oats and barley, in the twentieth-acre plats, was completed on July 11, and the following yields were obtained:

WINTER OATS.

<u>C.I. No.</u>	<u>Name</u>	<u>Yield per acre</u> * (Bushels)
427	Gray Winter	67.2
274-20	Snoma selection	64.4
435	Winter Turf	64.1
431	" "	61.9
518-3	Red Rustproof (Cliff)	61.9
206	Bicknell	59.1
273-19	Culberson selection	58.5
206-3	Bicknell "	57.6
273	Culberson	54.5 **
206-7	Bicknell selection	53.5
206-10	" "	53.0
651	Culberson "	49.3
259-11	Appler "	81.3 ***

* Average of 2 plats

** Average of 8 check plats

*** Yield of 1 plat.

WINTER BARLEY

<u>C.I. No.</u>	<u>Name</u>	<u>Yield per acre</u> * (Bushels)
519-VIII	Wisconsin Winter	33.5
223	Argentine	33.3
901	(Hybrid)	32.5
277	Scottish Pearl	32.3
646	Tenkau	32.1
408	Large Grained Winter	31.3
257	Tennessee Winter	30.7 **
895	(Hybrid)	29.2
554	Texas Winter	28.8
713	Canada "	28.5

583	Union Winter	27.9
252	Square Grained Winter	27.7
703	Hansees Hull-less	27.3
278	Tanbash	25.8
187	Swan Neck (2-rowed)	25.8
898	(Hybrid)	25.6
647	Two-rowed Winter	24.8
902	(Hybrid)	24.8
896	"	24.3
518	Maryland Winter	24.2
220	Mammoth "	23.5
702	Arlington Awnless	23.1 ***
648	Virginia Winter	19.4
648	" " selection	15.8

* Estimated from yield of 1 twentieth-acre plat.

** Average of 9 check plats

*** Average of 6 plats.

COLORADO:

Akron Field Station. July 11. Grains are ripening very rapidly, and several plats of oats and barley have been harvested. In some cases the berry is not well filled but prospects are good for a better yield than usual. Harvesting of barley in the nursery was begun this morning. Proso is almost fully headed, and some of the grain-sorghums have reached a height of 3 feet. Unless rain occurs soon, some of the later varieties will be damaged by the lack of moisture.

Mr. Donaldson, of the Judith Basin Substation, visited the station on July 7.

July 14. Mr. Ball writes the following regarding the conditions at Akron:

The cereal work at the station is in excellent condition. Seasonal conditions have been favorable to a large weed growth, but in spite of this both plats and nursery rows are clean. The flax plantings in plats may as well be abandoned and plowed up before the weed seed ripens. The section about Akron has never grown much flax. It may make a good crop on breaking, where weeds are ordinarily not abundant, but is not likely to do well on fallow, which contains weed seeds. Flax is

sown so late in the spring and starts so slowly that Russian thistles and pigweed soon overtop it. The quinoa did not germinate well in the nursery and the few plants are being greatly injured by plant lice, so that it is doubtful if any seed can be secured. The small grains are in excellent condition and good yields should be obtained. The stands are thin in some of the winter varieties, due in part to blowing out. The spring varieties are very good indeed.

Messrs. Babcock, Belz, Burr, McKinstry, Ogaard, Thysell and Fowle visited the experiment farm and inspected the cereal work on July 13.

SOUTH DAKOTA:

Highmore Substation. July 14. Weather during the past few days has been hot and windy, causing the more advanced grains to ripen rapidly. Sixty-Day oats will be ripe in a few days and winter rye is ripe and being cut. On July 13 the early varieties of barley in the varietal tests and the early seeding in the date-of-seeding test were harvested. Both the rye and barley promise excellent yields. The grain-sorghums and corn have made very rapid growth during the past week.

IOWA:

State Experiment Station (Ames). July 13. Mr. Warburton writes that the harvesting of the barley and winter wheat nurseries is completed and that the oat nursery is all harvested except a few rows of late varieties in the classification series. He plans to remain at the station about a week longer to complete the oat varietal descriptions in the laboratory.

On the new agronomy farm, all of the barley varieties and about one-half of the oat varieties are harvested.

MINNESOTA:

State Experiment Station (University Farm, St. Paul. July 14. Mr. Harlan writes that conditions on

the farm are very satisfactory. Weather has been exceedingly hot. The barleys are in excellent condition.

July 15. During the past week the hottest weather of the season occurred, the maximum temperature being 95 degrees (July 11), and the minimum, 54 (July 8). There has been no precipitation during July. A fairly severe epidemic of rust has been obtained in the rust nursery by persistent spraying. Practically all the varieties and selections are headed and leaf rust notes are now being taken. Partial results on heat treatments for loose smut in barley and wheat indicate the success of long-time low temperature treatments. These seem more practical for use than the short-time high temperature treatments which require more care in their application.

Dr. Humphrey has been a visitor at the station during the week and will leave here July 18.

UTAH:

Nephi Substation. July 11. Maximum temperature for the past week was 93 degrees (July 8); minimum, 48 (July 4). Precipitation during the week, 0.80 inch. The rapid ripening of winter wheat and barley has been retarded by the rains of the past week. Several plats of Utah winter barley, C.I. No. 592, were harvested on July 9, and the harvesting of winter wheats will commence next week. Boswell winter oats, C.I. No. 480, are beginning to ripen. In the rate-of-seeding test a good stand of this variety was obtained on plats seeded at the rate of 7 and 8 pecks per acre. Spring cereals are past 50 per cent headed and are in good condition. Sixty-Day oats are short, which will make harvesting quite difficult.

The second crop of alfalfa and the cultivated crops are in vigorous condition since the recent rains.

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NEWSLETTER

OF THE

OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,

U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

JUL 24

1914

July 24, 1914.

NOTICE REGARDING CORRECTIONS IN VOUCHERS.

A notice just received from the Comptroller of the Treasury states that "vouchers showing erasures or other alterations when received from claimants should be returned for the purpose of being recast before administrative certification and approval. The instructions should show that erasures or other alterations in the bill are not to be permitted. Fiscal Regulation No. 30, or other Departmental regulation contrary to this view, should be modified accordingly."

In accordance with the above, any erasures or unsightly changes in a voucher will necessitate the re-writing of the voucher. A slight error, neatly corrected, when initialed by the claimant, may still be accepted by the Treasury Department.

PURCHASE OF MOTOR VEHICLES AND MOTOR BOATS.

Congress has authorized the purchase of motor vehicles and motor boats by the Department of Agriculture out of the appropriation of the purchasing office under the following conditions:

Said vehicles and boats shall be used only for official service; all motor vehicles and boats purchased for the use of the Department must have conspicuously painted thereon "United States Department of Agriculture" and the name of the bureau to which it belongs; the use of any motor vehicle or boat owned by the Department for other than official purposes will be regarded as sufficient ground for dismissal.

The Secretary of Agriculture requests that these facts be strongly impressed upon all officers and employees having anything to do with operation or maintenance of such vehicles and boats.

CEREALS FOR EXPOSITION.

Field men should not fail to obtain the heads and seed of cereal varieties requested for the Dry-Farming Exposition and the Panama-Pacific Exposition. This refers both to the requests for barley or oats received direct from Professor Scribner and to requests for wheat and other crops made in person by Mr. Ball. Not many varieties are asked from any one station but it is extremely necessary that they be furnished in order that there may be no break in the plans made for these exhibits. In case any man cannot furnish certain varieties asked for he should so inform the Office at once, so that they may be gotten elsewhere. All material should be sent to Professor F. L. Scribner, 246 East Wing, Department of Agriculture, Washington, D. C., using the cloth shipping tags sent by his Office. Data on reverse of tags should be very plainly written in ink.

OFFICE NOTES.

Mr. Chambliss left Washington on July 22 for a short trip to Philadelphia and New York, for the purpose of conferring with rice importers and dealers with regard to the uses of rice varieties which have been developed and improved by this Department, especially those varieties that may be readily sold as brown or unmilled rices.

Dr. Leighty left Washington on July 23 for Ithaca, N. Y., to inspect the cooperative plantings of wheat at the Cornell University Agricultural Experiment Station and conferr with station officials regarding the work. He will also stop en route to inspect wheat fields in Lancaster and other counties in Pennsylvania.

FIELD NOTES

VIRGINIA:

Arlington Experimental Farm. July 22. Clear, warm weather has prevailed during the past week, with a maximum temperature of 94 degrees (July 21), and a minimum of 61 (July 20). Precipitation for the week has been 0.02 inch. The thrashing of winter wheat in field plats will be completed in a few days.

Mr. G. J. Bouyoucos, formerly of the Michigan Agricultural Experiment Station, was a visitor at the farm on July 21.

TEXAS:

Amarillo Cereal Field Station. July 18. Weather during the past week has been favorable to plant growth, with a maximum temperature of 96 degrees, and a minimum of 64. Precipitation of 0.21 inch occurred during the week. All row crops have been cultivated and are in normal condition. The disking of wheat stubble is now in progress. The prospect is favorable for a good grain-sorghum crop this season. Manchu kaoliang is in full head, and the medium-early kaoliangs, the milos and feterita are heading.

Mr. J. O. Belz, of the Office of Biophysical Investigations, visited the station on July 18.

Beaumont Cooperative Rice Substation. July 18. Weather during the past week has been very favorable to crop growth and has not been so warm as during the previous week. Only 0.01 inch of precipitation occurred, but there is enough moisture in the soil so that rain will not be needed for a week or more. The rices in the nursery are growing rapidly and are in good condition.

KANSAS:

Hays Branch Station. July 20. Weather during the past week has been cool and cloudy. Precipitation of 1.31 inches has occurred. On wheat stubble land the moisture has penetrated to a depth of 6 to 7 inches, but on land where weeds have grown the plows running at a depth of 5 inches turn up hard, dry clods. No thrashing has been done on the cereal project, but on the dry-land project, as far as the thrashing has proceeded, only moderate yields of low-grade wheat have been obtained. Seed-bed preparations have been begun on the field which is to be uniformly cropped to rye for green manure and followed by grain-sorghums. Grain-sorghums and corn were beginning to suffer from drought, but the precipitation of the week should insure fair yields. The early plat of Manchu Brown Kaoliang is fully headed, 56 days from time of planting. Freed Sorgo is still farther advanced and the mutant, 240 A, is beginning to head. C.I. Nos. 328 and 261 are considerably earlier than C.I. No. 171, which was planted on the same date.

COLORADO:

Akron Field Station. July 18. Precipitation of 0.25 inch occurred on July 17. Erivan was the first spring wheat to become ripe. The harvesting of barley varieties has been completed, and more than a third of the winter wheat series is now in the shock. The early varieties of oats have been harvested, and the harvesting of the nursery has been begun.

WYOMING:

Cheyenne Experiment Farm (Archer). July 18. The drought, which began about one month ago, still continues. Maximum temperature for the past two weeks was 91 degrees; minimum, 50; precipitation, 0.16 inch; evaporation, 4.14 inches. The harvesting of winter wheat was begun on July 17, and the earlier varieties of oats and barley will be ready for harvesting within the next few days. Flax and row crops are standing the drought

well, but corn leaves have begun to curl. The corn is tasseling very short. Some oat hay, which will yield probably half a ton per acre, was cut during the past week. Peas and oats for hay will yield much less, and the cereal yields this season will undoubtedly be very low.

Mr. W. W. Burr, of the Office of Dry-Land Agriculture Investigations, and Mr. C. R. Ball, of the Office of Cereal Investigations, visited the station during the past week.

SOUTH DAKOTA:

Highmore Substation. July 18. During the past week the weather has continued to be hot and dry, with fairly high winds, which conditions have hastened the ripening of all grains. The barleys, except those in the small nursery plantings, and the early varieties of oats, have been harvested. Ak, C.I. No. 3076, was the first wheat ripe and was harvested July 18. A number of the early varieties of wheat, as well as the early dates-of-seeding, will be ready for harvesting July 20. Two winter wheats were harvested on the 18th, but do not promise very good yields. Plantings of flax, made on April 1 and 15, have been harvested and promise the best yields, although weeds have reduced the flax yields greatly.

IOWA:

State Experiment Station (Ames). July 20. Thrashing of the nursery, consisting of 860 rod rows of oats and barley and 284 plats of wheat, the latter consisting of 4 16-foot rows, was completed today. The entire nursery, consisting of 2,853 rod rows in 1,144 separate lots, was thrashed in just one week. The notes in the oat classification studies are about completed, and Mr. Warburton plans to leave the station on the evening of July 21 for the Cheyenne Experiment Farm at Archer, Wyo.

Mr. M. A. Carleton, Cerealist, spent July 19 and 20 at the station.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). July 17. Dr. Humphrey, Cereal Pathologist, makes the following comments upon conditions observed during his recent trip through Wisconsin and Minnesota:

"There is promise of phenomenal yields throughout the greater part of the grain-growing area of Minnesota. There is some anxiety felt lest a rust epidemic should appear, but in some sections wheat and oats are so far advanced as to be out of danger. Rye and winter wheat are in the shock and big yields are certain.

The stripe disease of barley, responsible last year for serious loss to barley growers in Wisconsin and Minnesota, is either altogether wanting or so scarce as to be of no economic interest to the growers. This seasonal difference in the amount of infection seems in some way to be related to climatic conditions. An unusual amount of the leaf smut of rye is reported from different sections of the state.

Dr. A. G. Johnson, of the University of Wisconsin, visited the Minnesota Experiment Station on July 16. He spent the day in the barley plats taking notes on the *Helminthosporium* diseases of barley."

Dr. Humphrey has also recently visited the experiment station at Fargo, N. Dak., and next week will make a trip through western Minnesota and South Dakota, taking notes in the field and at the Brookings Experiment Station.

NORTH DAKOTA:

Dickinson Substation. July 17. A severe wind storm on July 16 did considerable damage to all grain, but especially to oats, by causing them to lodge badly. The straw of all the cereals is unusually long this year. Wheat is in the milk stage and prospects are excellent for a big crop. Early varieties of barley and oats are starting to ripen.

Williston Substation. July 20. Weather during the past two weeks has been excellent for the crops. There have been no hot winds and the precipitation, 1.63 inches, has been sufficient for the filling of grain. None of the grain in field plats is ripe, but some of the barleys and oats in nursery rows are nearly mature. There is some lodging in the field plats due to the rank growth of the grain.

UTAH:

Nephi Substation. July 19. Weather during the past week has been hot and sultry, with a maximum temperature of 90 degrees (July 12), and a minimum of 49 (July 17). Precipitation of 0.11 inch occurred on July 14. Harvesting of fall-sown crops is in progress, and, with the exception of a few plats of winter emmer and Odessa wheat, all winter crops are ripe. Spring crops are beginning to ripen, but are not withstanding the drought conditions as well as the winter ones.

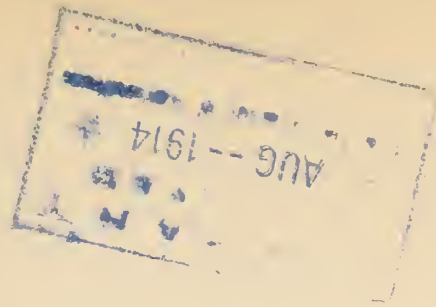
Mr. E. D. Ball, Director of the Utah Experiment Station, Logan, Utah, inspected the work on July 18.

OREGON:

Eastern Oregon Dry-Farming Substation. July 19. The following report covers conditions from July 1 to 18:

Weather has continued warm and dry, with a maximum temperature of 99 degrees (July 18), and a minimum of 49 (July 5). There have been 6 days with temperatures above 90 degrees. Only 0.08 inch of precipitation has occurred. All crops not ripe have suffered from the hot weather. The grains have ripened so rapidly that it has been necessary to keep 2 self-binders in operation during the past week. All peas and grains, except the spring wheats, have been harvested. Corn, which heretofore has not suffered from the drought, is beginning to wilt. Thrashing will begin on July 20.

Prof. G. R. Hyslop, of the Agronomy Department of the Oregon Agricultural College, inspected the station last week.



NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
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1914

July 31, 1914.

OFFICE NOTES.

Dr. Leighty, In Charge of Eastern Wheat Investigations, returned to Washington on July 28, after having inspected the cooperative work in wheat breeding at Cornell University. He also stopped in Lancaster County, Pennsylvania, to look over wheat fields and visit the seed house of A. H. Hoffman, at Landisville.

Mr. Chambliss, In Charge of Rice Investigations, returned to the office on July 29 from a trip to Philadelphia and New York, where he consulted rice importers and dealers regarding the uses of rice varieties developed and improved by this Department.

Mr. Richard V. Miller has been appointed to take charge of the broomcorn and grain-sorghum work at Woodward, Okla., and will arrive at that point on August 10.

Mr. J. A. Clark, who has been in charge of the cereal work at the Dickinson Substation, has been appointed as Mr. Ball's assistant in the western wheat investigations. Mr. Ralph W. Smith has been appointed to take Mr. Clark's place at Dickinson.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. July 29. Warm and partly cloudy weather has prevailed during the past week, with a maximum temperature of 98 degrees and a minimum of 67. Two rains on July 28 gave a total precipitation of 1.21 inches, which was of material benefit to growing crops, especially corn which was begin-

ning to shrivel from the heat and drought. The wild rice is nearly in full flower, and on July 23 a number of the plants were cut back for experimental purposes later in the season. The perennial rice is making rapid and vigorous growth, and the rice in the varietal tests is also growing nicely. Several of the early varieties of flax were harvested on July 27. Thrashing of winter wheat in the nursery is now in progress.

LOUISIANA:

Crowley Rice Experiment Station. All rices on the station are in excellent condition, especially those that are being increased. Several varieties in the nursery are heading.

Louisiana. The older rice in this vicinity is very grassy, while the younger rice has a good color and on the whole is very clean. In a few fields rice is heading, but in many fields in this section it is only a few inches high.

Corn is unusually good this season and the acreage is large compared with that of previous ones. The present crop is better cultivated than is the usual practice in this section.

TEXAS:

Amarillo Cereal Field Station. July 25. Weather during the week has been clear and warm, with high evaporation. The maximum temperature was 95 degrees; minimum, 61; and precipitation, 0.11 inch. The early and medium-early planted row crops are being damaged considerably by lack of moisture, while the late plantings, not having made as heavy growth, are as yet not suffering to any great extent. The grain-sorghums and broomcorn will not make a heavy yield unless rain comes within a short time. Milos, durras and kaoliangs are practically all headed, and heads are beginning to appear in the kafirs.

COLORADO:

Akron Field Station. July 27. Warm weather has prevailed during the past week, with a maximum temperature of 90 degrees and a minimum of 55. There has been no precipitation sufficient to be of value to crops. The harvesting of the field plats of early varieties of cereals has been completed, and that of the nursery is progressing nicely. Grain-sorghums are heading rapidly.

Dr. Humphrey, Cereal Pathologist, and Mr. E. C. Chilcott and Mr. J. S. Cole, of the Office of Dry-Land Agriculture, visited the station on July 27. The new office building and laboratory will greatly facilitate the work of cereal investigations, as the present quarters are not adequate for the proper care of the large amount of material that is handled.

WYOMING:

Chevenne Experiment Farm (Archer). July 25. Maximum temperature for the past week was 88 degrees; minimum, 46; precipitation, 0.39 inch. Drought conditions still continue and the insufficient moisture is causing crops to ripen very rapidly. Millet varieties are fully headed, and some varieties of flax are turning. Corn is growing slowly but will probably produce some forage. The harvesting of the earlier varieties of oats and barley began on July 20.

Dr. Humphrey, Cereal Pathologist, Mr. Warburton, In Charge of Oat Investigations, and Mr. J. O. Belz, of the Office of Biophysical Investigations, visited the station during the past week.

SOUTH DAKOTA:

Highmore Substation. July 25. Weather during the past week has continued hot and dry, with medium high winds, and the grains have ripened rapidly. If the present conditions continue, all small grains, including those in the nursery, will be harvested by the end of the week. The corn, grain-sorghums, and millet need rain and are commencing to wither. The second cutting of alfalfa will be short.

Mr. Ball, In Charge of Western Wheat Investigations, and Dr. A. G. Johnson, of the Wisconsin Experiment Station, visited this station on July 21.

Mr. Ball sends the following notes upon condition of cereals observed at Brookings and Highmore:

Owing to seasonal conditions, rust has been unusually prevalent. In the late nursery at Highmore, where nearly 100 of the new Russian wheats are growing, the rust covers the plants, occurring even on the glumes. Both leaf rust and stem rust occur in abundance on the leaves. The small percentage of loose smut in the durum wheats, observed at the stations previously visited, was noted also at Brookings and Highmore.

Dr. A. G. Johnson came from Brookings to Highmore with Mr. Ball and took notes on the cereal diseases at that station. He found some *Helminthosporium*, also bacterial disease of barley leaf, and the pycnidial stage of a fungus common on barley in Minnesota. Mr. Ball will go from Highmore to Cottonwood and Newell, South Dakota.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). July 28. The following report covers conditions during the past two weeks:

During the past week the weather has been very warm, and the maximum temperature for the two weeks was 95.5 degrees (July 26); minimum, 50.5 (July 18). Precipitation of 0.23 inch occurred on the 16th and 0.47 on the 22d, which is practically all for the month. All wheat varieties are ripening rapidly and harvesting has just commenced. The notes on smut experiments and the leaf rust notes are practically complete.

Mr. Parker, Scientific Assistant in Pathology, returned to the station on July 27, from Columbia, Mo. He stopped en route at Manhattan, Kans., to examine the cereal disease experiments at that point.

NORTH DAKOTA:

Dickinson Substation. July 27. A severe hail storm occurred on July 26 and damaged the crops badly, reducing the yields probably about 50 per cent. As a result of the damage done by this storm, yields this season will be of no value for comparative results. It may be impossible to harvest any of the oat varieties as they have lodged very badly.

On July 25 Mr. Ralph W. Smith arrived at the station, where he is to have charge of the cereal work, Mr. J. A. Clark having been appointed as Mr. Ball's assistant in the investigations in western wheat.

Williston Substation. July 27. Weather during the past week has been very hot and there has been no precipitation. Harvesting of field plats of oats and barley is in progress. In the nursery nearly all varieties of barley and oats, and a few early strains of wheat, are ripe. Ghirka spring wheat is ripe in the field plats. All grains, in both the nursery and field plats, are in excellent condition. A few plats of barley and of Sixty-Day and Kherson oats ripened last week, but were left standing until after the annual farmers' picnic, which was held on July 25. About 400 farmers attended the picnic.

In this section the late-seeded wheat, which is in the filling stage, would be benefited by rain, but no crops as yet are suffering badly from lack of moisture. In the vicinity many fields of oats and barley are ripe and harvesting is in progress.

An additional ten acres of land, adjoining the farm on the south, has been rented. It was broken during July and will be ready for seeding next year. The portion to be used for the cereal work is 1050' by 305', and joins the present project on the south.

Mandan Substation. July 24. Mr. Clark, In Charge of Flax Investigations, reports that flax is very early at this point. It is in excellent condition, as

are all other cereal crops. Heavy yields are expected, not only on the station farm, but throughout the surrounding country and practically throughout the state.

UTAH:

Nephi Substation. July 25. Weather during the past week has been generally fair, with a maximum temperature of 91 degrees (July 19); and a minimum of 45 (July 22). Precipitation was 0.26 inch. The harvesting of winter cereals in field plats was completed on July 25. Spring cereals in field plats, with the exception of a few plats of spring durums, are past 50 per cent ripe. Harvesting of the winter nursery is in progress, but the spring nursery is just beginning to ripen. Inter-tilled crops were cultivated during the last of the week.

Mr. Warburton, In Charge of Oat Investigations, inspected the work at the station on July 25.

CALIFORNIA:

Biggs Cereal Field Station. In the vicinity of Biggs there is a wide variation in the condition of the rice crop. Rice seeded early and under proper conditions looks exceptionally well. Barnyard grass is in practically every rice field and in some it is a very serious weed. All farmers are being advised to eradicate it before seed matures.

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NEWSLETTER
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MEMORANDUM

Referring to memorandum, which appeared in the Newsletter of July 10, regarding the limitation of per diem allowance as contained in the Sundry Civil Appropriation Bill, it will be noted that this Bill passed on August 1, and that hereafter no per diem allowance higher than \$4 can be authorized, and rates higher than that amount in existing authorizations are therefore reduced to \$4 beginning with August 1, 1914. As the inclusion of provision for reimbursement for actual expenses and provision for per diem allowance in lieu of subsistence in a single letter has been determined to be inadvisable, no higher rate of subsistence will be authorized in the future, except in cases where the authorizations provide for the reimbursement of actual expenses instead of per diem in lieu of subsistence.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Aug. 5. Maximum temperature for the week, 91 degrees (Aug. 2); minimum, 56. Precipitation during the week was 0.03 inch, and the total for July, 2.8 inches. The thrashing of the winter wheat nursery will be completed in a few days. The following yields were obtained from the wheat varieties in twentieth-acre plats:

<u>C.I. No.</u>	<u>Name</u>	<u>Yield per acre</u> (Bu.)
1915	Purple Straw	38.2
1944	Little Club	36.8
1733	Dawsons Golden Chaff	35.2
1945	Lancaster	33.3
1744	Early Genesee Giant	32.5

<u>C.I. No.</u>	<u>Name</u>	<u>Yield per acre</u> (Bu.)
2980	Stoner (Miracle)	32.3
3614	(Hybrid)	31.3
3613	"	31.2
1744	Early Genesee Giant Selection	31.1
1933	Jones Winter Fife Selection	31.0
3616	(Hybrid)	31.0
1957	Fultzo-Mediterranean	30.8
1733	Dawsons Golden Chaff Selection	30.7
3326	Currells Prolific	30.3
1973	New Amber Longberry	29.5
1979	Poole	29.2
1923	Fultz	29.1
1912	Bluestem	28.7
1981	Dietz Longberry	28.2 *
2008	Mammoth Red	28.2
1923	Fultz Selection	28.2
3617	(Hybrid)	27.8
1930	Rocky Mountain	26.3
3608	(Hybrid)	25.3
3638	-----	24.7
1933	Jones Winter Fife	24.7
1949	Maryland Flint	23.7
1974	Martins Amber	23.7
1942	Bearded Winter Fife	23.3
3609	(Hybrid)	23.3
3612	"	23.3
1980	Fultzo-Mediterranean	22.5
1911	Bearded Purple Straw	22.3
2496	Jones Silver Sheaf Longberry	22.3
3618	(Hybrid)	22.2
3277	Virginia Hybrid	21.5
1969	Michigan Amber	21.0
3610	(Hybrid)	21.0
180	China	20.0

* Average of 13 check plats.

LOUISIANA:

Crowley Rice Experiment Station. Rices appear to be in exceptionally good condition and many of the increase plats are in "boot". The rains have prevented the cultivation of the first planting of soy beans until

today. A good stand was obtained of the second planting, which was made last week, and, if the weather is suitable, this planting will make a good growth before frost. The station in general is in very good condition; corn and other crops are better than ever before.

The Southwest Louisiana Agricultural Society held its regular meeting at the station on July 25, with Professor Dodson and Mr. Kidder as the principal speakers. Mr. Kidder gave an interesting and instructive talk on seed corn selection. Fifty-one farmers attended the meeting.

TEXAS:

Amarillo Cereal Field Station. Aug. 1. The weather during the past week has been hot and dry, with little wind. Maximum temperature for the week, 97 degrees; minimum, 62; precipitation, 0.05 inch. Some of the plats of proso were harvested during the week.

The new wagon scales were put in place this week. A nursery thrasher has been constructed from a part of the old "Baby Vibrator."

Mr. Rothgeb, Assistant in Grain-Sorghum Investigations, left the station on July 30 for a short trip to Woodward, Okla., to attend to the broomcorn and grain-sorghum experiments at that station. Mr. H. N. Vinall, of the Office of Forage Crop Investigations, visited the station July 27 and 28.

Beaumont Cooperative Rice Substation. The following report covers weather conditions and experimental work during the month from June 27 to July 27:

Maximum temperature, 100 degrees (July 7); lowest maximum, 80 (July 9); minimum, 68 (July 27); highest minimum, 76 (July 14). The mean maximum temperature of 92 degrees was approximately the same as during June, and the mean minimum was 72 for both months. July, however, was more favorable to plant growth because of the frequent showers, there being 12 days on which more than 0.01 inch of precipitation occurred. The total for the month was

3.62 inches, the greatest precipitation for any one day being 1.38 inches on July 23. There were 8 clear, 17 partly cloudy and 5 cloudy days.

As a rule the later plantings of rice look better than the earlier ones. Because of difficulty in getting the ground in good condition, the varietal test was not planted until last, being finished on July 1. The varieties are growing rapidly and are in thrifty condition. The first planting of rice in the date-of-seeding test began to head on July 21. In the cultural experiment plats the rice has a better stand and is growing faster in the better prepared seed-bed. Indications are that valuable data will be secured on the cultivation test of rice. In the rotation work the rice plats that were in rice last year contain more grass and weeds than where the ground was in dry-land crops last season. It was noticeably easier to secure a stand of dry-land crops on plats that were not irrigated last year than on those where rice was grown. Early plowing would tend to overcome this feature to some extent, at least.

Surveying of the farm for the purpose of preparing a plan for draining the station and protecting it from floods was begun July 24.

The Sudan grass, the Japanese cane, and the rice nursery were features of special interest to the visitors at the farm during the month.

Aug. 1. The weather during the week has been favorable, with a maximum temperature of 98 degrees and a minimum of 70.5. Precipitation has been 1.19 inches, of which 1.18 fell on July 30. The second planting of Honduras rice in the date-of-seeding test is heading, and the earliest planting is ready to be drained within a few days. The earliest rices in the nursery are also heading.

Mr. Laude left the station on July 26 to attend the Farmers' Congress at College Station, returning on July 30.

OKLAHOMA:

Woodward Field Station. Aug. 1. The weather continues dry and hot, with the temperature 100 degrees or over. The last precipitation of value to plant growth occurred July 6 and totaled 1.5 inches. This furnished sufficient moisture to develop normal plant growth until about 10 days ago. Because of the low moisture and the extreme heat the crops farthest advanced are firing badly. The grain-sorghums and broom-corn are headed, showing a head to practically every main stalk; more rain is needed, however, to ensure a large yield of good quality grain. Manchu Kaoliang, C.I. No. 328, is ripe; C.I. No. 171 is 50 per cent or more ripe; and C.I. Nos. 309, 190, and 310, and feterita are ripening. Almost the whole of the broomcorn crop has been damaged by the heat and winds; from 2 to 6 inches of the brush is scorched, which will lower the grade to some extent. The late plantings seem to be standing the drought remarkably well.

COLORADO:

Akron Field Station. Aug. 2. Maximum temperature for the week was 95 degrees. There has been some precipitation which will help the millet and sorghum. The last of the field plats of wheat, oats, and emmer were harvested during the week, and the harvesting of the wheat, oat, and barley nurseries is nearly complete. Proso is beginning to ripen and most of the grain-sorghums are fully headed. Thrashing of the rotation plats is progressing nicely.

WYOMING:

Cheyenne Experiment Farm (Archer). Aug. 1. Maximum temperature for the past week, 90 degrees; minimum, 54; precipitation, 0.92 inch; evaporation, 1.248 inches. All barley and nearly all oat varieties have been harvested. Wheat varieties are ripening rapidly and will be ready for harvesting during the coming week. Flax varieties are turning.

Mr. Carleton, Cerealist, visited the station on July 27 and 28. On July 30, President J. A. Widtsoe, of the Utah Agricultural College, Dr. E. G. Peterson, Director of Extension Work for the same institution, Dr. R. J. Evans, State Leader in Farm Management for Utah, and Mr. R. H. Forbes, Director of the Arizona Experiment Station, visited this station. Dr. A. C. True, of the Office of Experiment Station, Mr. C. B. Smith, of the Office of Farm Management, and Messrs. F. H. Vaughan and John Gordon, members of the State Farm Board, visited the station on July 31.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). Aug. 4. Maximum temperature for the past week, 85 degrees (July 28); minimum, 56 (Aug. 3); precipitation, 0.655 inch. Harvesting and selection work are in progress. The severe rust infection gives opportunity for rigorous selection.

Mr. Parker, Assistant in Cereal Pathology, is on a short trip through North and South Dakota and Minnesota, investigation the rust situation which is reported serious in the spring wheat belt. He will also examine plantings at Crookston, Minn., and Brookings, S. Dak., of the rust-resistant hybrids developed in this work. Mr. Carleton, Cerealist, examined the cereal disease plats on August 4. Mr. Potter, Assistant in Cereal Pathology, will leave the station August 10 for Mitchell, Nebr., where he will remain for about 3 weeks, working on the corn smut experiments.

NORTH DAKOTA:

Dickinson Substation. July 28. Mr. Ball writes that the crops which were unusually fine this season were nearly totally destroyed by storms which occurred July 26 and 27. The first was a heavy hail storm, and during the second 4 inches of rain fell and some hail. Gatami barley was the only grain which had been harvested. The winter wheats, and the series of tillage and rate-of-seeding plats, were the least damaged, as they were on the north side of the farm.

Aug. 1. Maximum temperature for the week, 99 degrees; minimum, 61; precipitation, 5.16 inches. Severe hailstorms on July 26 and 28 nearly destroyed the crops as far as comparative yields are concerned. All grain is badly lodged and shattered. Early oats and barley are being harvested with the mower, while most of the wheat can be harvested with the binder.

During the past week Mr. Ball, In Charge of Western Wheat Investigations, Mr. Clark, In Charge of Flax Investigations, Mr. W. W. Burr, of the Office of Dry-Land Agriculture, and Mr. J. O. Belz, of the Biophysical Laboratory, visited the station. Mr. J. A. Clark left the station Thursday, July 30, to take up his new work as Assistant to Mr. Ball in the western wheat work.

Williston Substation. Aug. 3. Maximum temperature for the week, 100 degrees; minimum, 58. Precipitation of 1.08 inches has occurred, which will help the filling of the wheat and oat kernels. Wheat and oats are looking very well and corn is excellent. The nursery rows of wheat, oats and barley are nearly all cut, and some of the varietal plats of grain have been harvested. Many of the field plats are ripe and will be harvested within a few days.

On July 31 Mr. Babcock rode 35 miles north of the station into the farming districts. All grain crops appeared to be in very fine condition. Some barley had been cut, and a few fields of wheat and oats were nearly ready for harvesting. The greater portion of the wheat and oats were later in this section than in the Williston valley. Most flax observed was thin in stand and rather weedy, as is the rule on old ground, but a few excellent stands were seen which will undoubtedly yield 20 bushels per acre.

Director Thomas Cooper of the North Dakota Agricultural College and Superintendent Aune of the Bellefourche Experiment Farm (South Dakota), visited the station on July 31. Superintendent Ruzicka accompanied them on August 1 on a trip to the substations at Mandan, N. Dak., and Huntley and Moccasin, Mont.

MONTANA:

Judith Basin Substation. (Hoccasin). Aug. 1. The weather during the past month has been very hot and dry, the total precipitation for the month being only 0.4 inch. This came in a number of small showers and was of no benefit to the growing crops. In addition to the lack of rain, the weather has been very warm, for this section of the country. There were 7 days during the latter part of the month when the temperature was 90 or higher, and the maximum temperature was 93 on July 28. These climatic conditions have caused the grains to ripen very rapidly and the time of ripening of the different varieties has varied little. Some of the early oats and barleys have been cut by hand, and the binders will start work on August 3.

Mr. Clark, In Charge of Flax Investigations, writes from Billings, Montana, as follows:

A trip of over 200 miles was made by automobile through the country surrounding Fallon, Mont. Crops in that territory have suffered severely from drought and recent hot weather, even winter wheat shrinking to some extent. With the exception of a few fields, most of the crops were not good. In most of the flax fields a considerable number, sometimes half or more, of the plants, were dead, as a result of flax canker or wilt diseases.

UTAH:

Nephi Substation. Aug. 1. Partly cloudy weather has prevailed during the past week, with a precipitation of 0.4 inch. The total precipitation for July was 1.74 inches. Maximum temperature for the past week was 90 degrees (Aug. 1); minimum, 54 (July 28-31). Harvesting of the winter nursery was completed during the past week. Spring oats are ripe and will be harvested in a few days, and spring durum wheats are 50 per cent ripe. The thrashing of cereals in field plats and nursery will commence next week.

The harvesting of the big crop of winter wheat on the Levan Ridge is now in progress. It has been necessary to employ an extra force of men, and 2 combined harvesters and 10 headers are in operation.

Dr. Humphrey, Cereal Pathologist, visited the station during the past week.

CALIFORNIA:

Biggs Cereal Field Station. The rice on the station is making good growth and looks well. As a result of the flood last winter, a great deal of difficulty has been had with barnyard grass, but the station is now free from this growth.

State Notes. Normal weather conditions continue. The rice crop as a whole is later this year than last. Some of the fields are in excellent condition and will fully equal the best ones of last year. Many of the farmers in the Richvale district continue to have difficulty in getting water. A considerable acreage has not yet been submerged.

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NEWSLETTER
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MEMORANDA.

Formerly, in exceptional cases, vouchers were paid for the use of teams belonging to employees of the Government, but recently the Comptroller of the Treasury has rendered a decision, in connection with a voucher presented by another Office, that no person employed by the Government will be permitted to receive reimbursement from the Government for the use of teams, implements, or vehicles, unless the same is specifically authorized in the appointment. Probably in case of need an appointment can be changed to include hire of teams.

A recent memorandum from the Assistant Secretary, making suggestions whereby the development of a closer understanding regarding the relation of the work of this Department to the administration of the reclamation projects by the Reclamation Service in the Department of the Interior, contains the following:

"It is suggested that representatives of the Bureau who contemplate visiting the Government reclamation projects acquaint the Project Managers with their plans, when possible, somewhat in advance of arrival, with a view to establishing and maintaining a close and friendly working relation which will insure against any misapprehension regarding the character or relation of the work in the minds of either the settlers or the representatives of the Reclamation Service upon the projects."

Any men of the Office of Cereal Investigations who contemplate visiting reclamation projects will please govern themselves according to the above.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Aug. 12. Warm weather has prevailed during the past week, with a maximum temperature of 97 degrees (Aug. 9), and a minimum of 63 (Aug. 8). Precipitation for the week has been 1.36 inches, of which 1.09 inches occurred on the evening of August 11. This rain was badly needed. The thrashing of winter wheat in head rows and the fanning and grading of winter barley are now in progress.

A thrashing machine recently obtained from the College of Agriculture, Cornell University, is being used for thrashing the rod rows and smaller plats.

Mr. Barker, an instructor in the College of Agriculture, Cornell University, visited the farm on August 6.

TEXAS:

Amarillo Cereal Field Station. Aug. 8. Maximum temperature for the past week, 94 degrees; minimum, 60; precipitation, 1.4 inches. The weather during the past week has been more favorable to plant growth than for some time past. The precipitation fell on 3 days, which not only cooled off the atmosphere, but added sufficient moisture to the soil to be of value to the crop. However, without more rain in a short time, the relief will be only temporary. All varieties of grain-sorghums are in full head, except the very late kafirs. Early kaoliangs are ripe and others are ripening. Indications at present are that the milo crop will make from fair to good yields. Small-grain thrashing was begun on August 8.

Texas Sub-Station No. 4, Beaumont, Texas.
Aug. 8. Maximum temperature for the past week, 93.5

degrees; minimum, 68.5. Weather has been cloudy and rainy, precipitation occurring on 6 days, with a total precipitation of 3.84 inches. Teams could not work in the fields after August 4. The earliest rice fields were ready for cutting the middle of the week, but the rain prevented starting the binders. Much of the early-planted rice will ripen within the next ten days, and indications are for good yields throughout this section. The nursery rices are heading rapidly.

Because of the wet weather, rust has started on much of the Sudan Grass.

WYOMING:

Chevenne Experiment Farm (Archer). Aug. 8. Maximum temperature for the past week, 93 degrees; minimum, 53; precipitation, trace. The harvesting of wheat, oats, and barley is practically completed, and flax varieties will be ready for harvesting next week. The corn is curling badly because of the hot, dry weather.

Mr. C. H. Clark, In Charge of Flax Investigations, visited the station on August 2 and 3; and Mr. J. A. Clark, Assistant in Western Wheat Investigations, was a visitor on August 7 and 8.

SOUTH DAKOTA:

Highmore Substation. Aug. 8. Weather conditions are still unfavorable to the late crops. Because of the continued dry weather, the millets and grain-sorghums will probably make smaller yields than for several years past. Corn is nearly a failure and a large part of the crop on the surrounding farms is being cut for feed. The thrashing of the small grains has been begun, and some interesting data in the date-of-seeding tests with barley and oats are given below:

C.I. No.	Variety	Dates of Planting		
		<u>April 1</u> Yield per A. (Bu.)	<u>April 15</u> Yield per A. (Bu.)	<u>May 1</u> Yield per A. (Bu.)
	BARLEY			
195	White Smyrna	45.9	37.5	33.3
575	Gatami	62.5	51.0	52.1
182	Odessa	54.2	43.7	43.7
	OATS			
165	Sixty-Day	65.6	56.3	40.6
134	Swedish Select	48.4	42.2	23.4

MINNESOTA:

State Experiment Station (University Farm, St. Paul). Aug. 11. Maximum temperature for the week, 97 degrees (Aug. 8); minimum, 49 (Aug. 11); precipitation, 2.63 inches. Cool, cloudy weather has prevailed, with precipitation on 4 days. All bulk selections, increase plats, and varieties in the rust nursery have been harvested. Harvesting of the individual selections will be completed next week.

NORTH DAKOTA:

Dickinson Substation. Aug. 8. The weather has been hot and sultry during most of the week, with a maximum temperature of 98 degrees, and a minimum of 48. Precipitation was 0.51 inch. The harvesting of the varietal plats is nearly complete, and the nursery is partly harvested. This work has been greatly impeded by the lodging of the grain due to the wind and hail storm of last week.

Mr. Carleton, Cerealist, visited the station on August 8.

Williston Substation. Aug. 10. The first half of the week was hot and grain ripened rapidly, but the last of the week was cool. With the exception of flax and proso, all of the varietal plats have been cut and also nearly all of the nursery rows.

Wheat harvest is in progress throughout the surrounding districts.

Mr. W. W. Burr, of the Office of Dry-Land Agriculture, and Mr. Clark, In Charge of Flax Investigations, visited the station on August 8. Mr. Warburton, In Charge of Oat Investigations, was a visitor at the station on August 10.

IDAHO:

Aberdeen Substation. Mr. Warburton, In Charge of Oat Investigations, visited the station on August 6 and writes:

During the past ten days more than 100 complete descriptions have been prepared of the varieties of oats which were grown here under irrigation in the varietal classification and description work. The remainder of the 200 lots which were grown were found to be duplicates of others previously described. Herbarium specimens were taken from each of the lots.

Crops on the dry-farmed portion of the station are excellent, particularly winter wheat, thrashing of which is now under way. Because of a shortage of water for irrigation when it was most needed, crops on the irrigated portion of the farm are not as good as last year. Harvesting of the field plats of cereals was practically completed today.

UTAH:

Nephi Substation. Aug. 8. Weather during the past week has been partly cloudy, with 0.24 inch of precipitation. Maximum temperature for the week, 96 degrees (Aug. 6); minimum, 55 (Aug. 6). Spring oats in

the field plats were harvested during the past week, and in the nursery they are ripe. Spring durum wheats are 50 per cent or more ripe, and the flax varieties are past 50 per cent ripe. Thrashing of Turkey wheat, C. I. No. 2998, in the cultural tests, was done during the past week, with yields varying from 37.1 to 49.1 bushels per acre.

CALIFORNIA:

State Notes. Gridley will give a rice show Sept. 3rd and 6th, inclusive. Biggs will give their rice show Sept. 25th and 26th, inclusive.

OREGON:

Eastern Oregon Dry-Farming Substation (Moro).
Aug. 9. The following report covers the period from July 20 to August 9:

Dry, warm weather has continued, with a maximum temperature of 96 degrees (Aug. 2), and a minimum of 43 (Aug. 6). There has been no precipitation. The highest number of miles of wind was 373 on July 20, and the highest evaporation, .587 inch, was on the same date. All grains have been harvested and thrashing has been in progress since July 20. Following are some of the highest plat yields obtained:

TILLAGE (winter wheat, Alberta Red, C.I.
No. 2979)

Plat 485, plowed for summerfallow on April 1, 1913, and given good cultivation until seeding time and no further cultivation, yielded 32 bushels per acre.

SPRING BARLEY, Varietal Test.

<u>Variety</u>	<u>C.I.No.</u>	<u>Yield per acre</u> (Bu.)
Mariout	261	48.1
Black Algerian	708	46.0
Gatami	575	42.0
Peru	707	39.6
Hannchen	531	39.0
Ouchac	658	39.6
Oderbrucker	537	39.9

SPRING OATS, Varietal Test.

Sixty-Day (Selection No.165-1)	66.8
Kherson	59.1
Canadian	51.3

Mr. Ball, In Charge of Western Wheat Investigations, spent from August 1 to 5 at the station.

Harney Branch Station (Burns), July 31. The following report covers weather conditions and progress of work during the month of July:

Maximum temperature for the month was 97 degrees (July 19); minimum, 30.5 (July 21). There were 15 days with maximum temperatures of 90 or over, and 14 with temperatures between 85 and 90. There was much hot wind during the month and only 0.11 inch of precipitation, which occurred on July 4 and 6. As a result of the hot weather, all crops are maturing from 2 to 3 weeks earlier this year than last. The earliest maturing varieties generally have made the best apparent yields. The frost on the 21st did considerable damage to the later varieties of peas and certain of the wheats, oats and barleys. Alfalfa was also injured, while corn, millets and potatoes were frosted to the ground. The combination of extremely hot, dry weather throughout the month, with the addition of a

severe frost, will probably result in distinctly lessened yields from what had been indicated earlier in the season. Harvesting is now in progress and will proceed with all possible haste as the crops are ripening very rapidly.

A "Visitor's" day was held on July 5, with an attendance of about 125. Prof. Geo. R. Hyslop, of the Oregon Agricultural College, was the speaker of the day. Plans have been made for another meeting on August 8.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

AUG 21
1914

August 21, 1914.

NOTICE TO FIELD MEN.

All the field men will kindly note the receipt of a small paper-covered booklet entitled "Administrative Regulations of the Department of Agriculture, effective July 1, 1914." This contains important information for all connected with the Department and should be read carefully. It is separate and distinct from the Fiscal Regulations.

The attention of the field men is again called to the fact that an authorization from the Chief of the Bureau is necessary before attending and addressing meetings. This point is made very clear in the Administrative Regulations, on page 38, paragraph 92. If at any time a man is requested to address a meeting and has not sufficient time to write for permission the telegraph should be used, giving specific information as to the time, place, meeting, and subject.

OFFICE NOTES.

Mr. Chambliss, in charge of rice investigations, left Washington August 15 for a trip through the rice-growing districts. He will make stops in Georgia, Florida, South Carolina, Louisiana, Texas, and California.

CONDITIONS IN WASHINGTON AND OREGON.

Dr. Humphrey, cereal pathologist, sends the following notes on the general condition of cereals in Washington and Oregon:

With the exception of a few fields of spring wheat, harvest in southeastern Washington (the Palouse country) is now completed. The winter wheat yield promises to be fully up to the average, but there will be considerable loss from the great amount of bunt infection.

In Whitman County, where wheat growing is the principal industry, the smut problem has been a particularly serious one this season, some fields showing 30 per cent or more of infection. More than 60 explosions of thrashing machines have occurred in this county alone, and much doubt has been expressed as to the likelihood of all these being due to smut. In fact, some farmers and machine men claim to have found matches in the bundles of grain and such explosives as dynamite and nitroglycerin have been reported found near thrashing outfits.

The oat crop in Skagit County is unusually promising. The stand is even but some fields have lodged badly. There is no evidence of any rust and in but one field out of ten inspected was any smut observed.

On August 12 practically all grain in the Willamette Valley, Oregon, had been harvested and some thrashing done. For two of three days the maximum temperature in Corvallis was between 95 and 98, which is unusual.

FLAX CONDITIONS AT DIFFERENT STATIONS.

Mr. C. H. Clark, in charge of flax investigations, sends the following notes on the condition of flax at different stations visited by him:

Mr. Clark reached Huntley, Mont., on July 31 and found that the dry-land flax had been harvested, while that on the irrigated land was nearly ready for cutting. The stand of this was thick and the plats uniform and heavily seeded.

At Moccasin, Mont., (Aug. 5), where several acres are devoted to the flax plantings, the fields have been

kept in excellent condition. Flax diseases have been more serious this year than last and have affected the varietal plats to some extent. Yields will not be greatly reduced at the station, but in commercial fields seen in eastern Montana as much as 50 per cent of the plants were dead. Several of the newly imported strains show indications of becoming valuable in the Northern Great Plains. These have been planted in increase plats at Moccasin and will be available for distribution next year.

The flax at Archer, Wyo., was not so far advanced as at Huntley, but was ripening on August 3. Although the Russian thistle and other weeds have over-run many fields in the immediate neighborhood of the station, the three acres or more of field and nursery plantings have been kept relatively clean and results will be of value.

The limited number of flax varieties at Williston, N. Dak., have produced a good stand and are heavily seeded. Because of a shortage of labor some of the plats are badly infested with Russian thistle, but except for the late dates of seeding the plats can be harvested and thrashed.

At Fargo, N. Dak., the flax plantings of the agronomy department were so badly damaged by wilt that the entire field was plowed up, although some plats sown to the resistant strains produced at that station by Professor Bolley were not as badly affected as others. Plats of N.D.R. 114 on diseased land in the botanical gardens show a perfect stand and a good crop of seed is assured.

At Mandan, N. Dak., the plats in the dry-land rotations were harvested Aug. 12 and some of the early-seeded plats and early varieties were also ready to harvest on that date. Some of the varieties will not be ripe for several days, even with good ripening weather. The cool, cloudy weather now prevalent is not hastening the flax ripening. Cereal crops on this station are already to harvest.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Aug. 19. Maximum temperature for the week was 96 degrees (Aug. 18); minimum, 59 (Aug. 14). Precipitation for the week, 0.45 inch. The thrashing of winter wheat and oats in head rows was completed on Aug. 14. The fanning and grading of winter wheat is now in progress. The varieties of grain-sorghum in the environmental experiment are now about fully headed. The dwarf kafir and milo are much shorter than they have been in previous years. The land to be used for fall seeding of grains is now being plowed.

TEXAS:

Texas Substation No. 4. (Beaumont). Aug. 15. Maximum temperature for the week, 92 degrees (Aug. 15); minimum, 70 degrees (Aug. 9). While the precipitation was light (0.51 inch in three days) the humidity was great and did not allow the ground to become dry enough to cultivate at any time. The weather was cool and cloudy most of the week, and the past two weeks have been unfavorable to the dry-land crops, cotton and soy beans having made the best growth. The cowpeas which have previously done very well are now apparently being injured from the excessive moisture in the soil.

OKLAHOMA:

Woodward Field Station. Aug. 15. Maximum temperature for the past week, 92 degrees (Aug. 9); minimum, 62 (Aug. 10); precipitation, 0.88 inch. The early planting of broomcorn has been harvested. The quality of the brush was somewhat damaged by the hot winds about two weeks ago. The durra and the dwarf and standard kaoliangs have been cut and shocked. Crops are looking well, but the late plantings need rain badly.

Mr. Rothgeb, assistant in broomcorn and grain-sorghum investigations, spent the week at the station directing the harvesting of these crops and the taking of field notes.

KANSAS:

Hays Branch Station. Aug. 13. Thrashing of all small grain plats and head rows has been completed and the grains are being cleaned and weighed. Corn and the late grain-sorghums are suffering from drought. Feterita, Freed sorgo and the kaoliangs are well seeded and will make good yields of grain.

On July 28 and 29 Mr. Kiene made a short trip thru Trego and Gove counties, which are west of Ellis County. He found row crops in fine condition so far as moisture was concerned. The scarcity of horses due to the epidemic in 1912 is still marked and probably accounts for the weedy condition of the fields. Wheat and oats were making good yields.

COLORADO:

Akron Field Station. Aug. 16. Oats, barley, rye and a large part of the winter wheat have been thrashed during the past week. The yields are good, with the better varieties of oats averaging about 75 bushels per acre, barley 65 bushels, and wheat 25 bushels. The harvesting of the nursery is nearly completed, and the field plats of proso have been cut. The grain-sorghums are in very good condition.

On a trip made by Mr. McMurdo through the dry-land section north of the station, several fields of wheat were noted which will not yield more than 10 bushels to the acre and some have not even been harvested.

WYOMING:

Chevenne Experiment Farm (Archer). Aug. 15. The weather continues hot and dry, with a maximum temperature for the past week of 92 degrees, and a minimum of 54 degrees. Corn and sorghums are growing slowly and curling badly, because of the lack of moisture. Harvesting of all small cereals is practically completed and thrashing will begin as soon as possible.

SOUTH DAKOTA:

Highmore Substation. Aug. 15. Weather has remained hot and dry during the past week. The kaoliang is withstanding the severe conditions and will make a fair yield. Corn will make very little, if any, seed. Thrashing is progressing rapidly.

The wheat over the western two-thirds of the state was injured severely by the hot winds which came during the soft-dough stage. The grain is badly shrunk and in some cases is testing as low as 40 pounds to the bushel, which will reduce the price paid at the elevators. In Hyde County (Highmore) most of the grain will test between 50 and 56 pounds. The oats and early barley were not as severely injured by the hot winds as the wheat, so that the quality and weight of the grain is excellent.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). Aug. 18. Maximum temperature for the past week, 87 degrees (Aug. 17); minimum, 48.5 (Aug. 14). Precipitation occurred on three days with a total of 0.27 inch. The harvesting of the rust nursery was completed on Aug. 18 and thrashing will begin on the 20th.

NORTH DAKOTA:

Dickinson Substation. Aug. 15. The weather during the past week has been cool and favorable for

harvesting. The maximum temperature was 86 degrees; minimum, 43; precipitation, 0.27 inch. With the exception of late oats and flax, the harvesting of the varietal plats is completed. The fall nursery and part of the spring nursery has been harvested. Prosos and sorghums have recovered from the effects of the hail and the former are ripening.

Harvesting in the vicinity of the station is nearly completed and some stacking is being done. Thrashing will begin next week.

Williston Substation. Aug. 17. With the exception of flax, harvesting has been completed and thrashing will begin this week. It is expected to sow the winter wheats on August 18.

Mr. Warburton, in charge of oat investigations, was a visitor at the station on Aug. 10.

On August 11, the committee of the Board of Trustees of the North Dakota Agricultural College and Experiment Station visited the station, and after their inspection made a trip through the surrounding farming section. Mr. Babcock accompanied them and reports harvesting and thrashing in progress. Wheat was yielding less than had been estimated because of premature filling due to hot, dry weather.

Mr. J. A. Clark, assistant in western wheat investigations, visited the station on August 13 and 14 and inspected fields of grain in the vicinity, some of which were grown from seed obtained from the station. The Ghirka and Power Fife wheats seemed to have filled well and were more satisfactory than the varieties generally grown. The greater part of the flax seen was late, thin, and weedy, although some few fields looked good in stand and were ripening. There have been no frosts at the station but several fields of corn were seen portions of which had been frosted quite badly. These were on the uplands, about 100 to 200 feet higher than Williston.

IDAHO:

Aberdeen Substation. Aug. 16. The continued drought and hot weather have caused considerable damage to the various crops in this part of the State, the winter crops faring better than the spring. The last rain of any value fell on June 20. Since that date the temperature has been higher than previously recorded at the station, reaching 97 degrees on August 13. The average daily maximum temperature from July 1 to August 16 has been 90 degrees, 83 degrees being the previous record for this period. This hot weather has damaged even the irrigated crops, for it caused the snow in the mountains to melt long before the irrigation season was over. There was a general shortage of water wherever natural river flow was depended on for irrigation water.

Dry-land winter wheat plats are yielding from 25 to 45 bushels per acre on land previously summertilled. Winter wheat varieties are yielding very well considering the soil upon which they were grown this season. Turkey (C. I. No.1511), yielded 37.8 bushel per acre, with Alberta Red, Crimean, Bacska, Weissenberg, Turkey (C.I. No.4061), and Beloglina following closely with yields between 35 and 37.5 bushels per acre. Spring wheats are not as good as usual because of the drought. Early Baart and Fretes, the two highest yielding varieties, yielded 30 and 28 bushels per acre, respectively, while most of the others fell below 20 bushels. Irrigated barleys are yielding better this year than in 1913. California Feed, Sandrel, Odessa, and C.I. No.242, all six-rowed types, yielded from 86 to 80 bushels. Irrigated oat and barley nurseries are now being harvested.

Mr. Harlan, in charge of barley investigations, visited the station early in July, but owing to the rapid ripening of the barley crop in Minnesota could spend only one day at Aberdeen. Mr. Warburton, in charge of oat investigations, was at the station from July 28 to August 7, classifying and describing a large number of oat varieties which were grown under irrigation. Mr. Ball, in charge of western wheat investigations, spent August 13 and 14 at the station, classifying irrigated spring wheats. All the dry-land winter and spring wheats had already been thrashed.

UTAH:

Nephi Substation. Aug. 15. Maximum temperature for the past week, 95 degrees (Aug. 14); minimum, 46 (Aug. 10); maximum evaporation for 24 hours, 0.372 inch; no precipitation. Thrashing of field plats is well under way and the yields being obtained are much better than were estimated. Turkey and Koffoid wheats, Boswell winter oats, and Utah winter barley were seeded today in the time-of-seeding test. The seed bed was in good condition, but a dry mulch from 4 to 6 inches deep which covered the surface will greatly retard germination.

WASHINGTON:

State Experiment Station (Pullman). Aug. 15. The following report covers weather conditions and progress of the work from July 1 to August 10:

Maximum temperature for July was 103 degrees, minimum, 53; total precipitation, 0.13 inch. From August 1 to 10 the maximum temperature was 102 degrees; minimum, 43; no precipitation. All winter wheat plantings in connection with smut investigations have been harvested and work begun on spring wheat. Plantings of winter wheat on infected plats was begun on July 30.

Owing to the high percentage of smut in the wheat crop and the excessive dryness, over 100 thrashing machines in the Palouse country have been destroyed by smut explosions to date, with the thrashing not half done.

Dr. Humphrey, cereal pathologist, spent the week, Aug. 1 to 8, at the station, in connection with the smut investigations. Mr. Carleton, Cerealist, visited the station on August 12 and inspected the smut plats and cereal nursery.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

AUG 28
1914

August 28, 1914.

NOTICE REGARDING INITIALS OF RAILROADS.

It would save much time and inconvenience if the initials of railroads, where cash fare is paid for travel, were always inserted in reimbursement accounts. This regulation must be complied with.

NOTICE REGARDING AGRONOMIC NOTEBOOKS.

Before having a new supply of agronomic notebooks printed, it is desirable to have suggestions for changes; also, please state the number of books which will be required in your work during the coming year.

PUBLICATIONS.

An article entitled "Head Smut of Sorghum and Maize," by Mr. A. A. Potter, assistant in pathology, was published in the August number of the Journal of Agricultural Research.

OFFICE NOTES.

Mr. D. E. Stephens was appointed as Superintendent of Cereal Field Station, effective August 16, and will continue in charge of the Eastern Oregon Dry-Farming Substation, at Moro, Oregon.

Mr. C. W. Warburton, in charge of oat investigations, returned to the Office on August 21, after an extended trip through the West Central and Northwestern states, in the interest of oat culture.

Mr. G. H. Godfrey, assistant in pathology, left Washington on August 22 for Crowley, La., where he will investigate the diseases of rice at the experiment station and in rice fields in the locality.

Mr. H. V. Harlan, in charge of barley investigations, returned to the office on August 26 from a field trip through several of the barley-growing states.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Aug. 26. Clear and partly cloudy weather has prevailed during the past week, with a maximum temperature of 99 degrees, and a minimum of 59. Precipitation has been 1.46 inches. The harvesting of flax was completed on August 21. Most of the varieties did not ripen evenly and were not heavily seeded.

TEXAS:

Texas Sub-Station No. 4 (Beaumont). Aug. 22. The maximum temperature for the past week was 93 degrees (Aug. 21), and the minimum, 70.5 (Aug. 20). The relative humidity ranged from 73 degrees on Aug. 18 to 98 on the 20th and 22d. The ground was wet at the beginning of the week and with showers on 4 days, even though the total precipitation was only 0.5 inch, it remained too wet to cultivate.

OKLAHOMA:

Woodward Field Station. Aug. 22. During the past week the weather has been very warm, with a maximum temperature of 100 degrees (Aug. 21); and a minimum of 71 (Aug. 16). The average wind velocity was 9.5 miles per

hour. The warm weather has ripened the grain very rapidly and has done further damage to the broomcorn. A high percentage of the milo has not headed because of the lack of moisture. Most of the earlier plantings of grain-sorghums are ready to cut.

The broomcorn seeder and baler has been received and work will be started with it next week.

KANSAS:

Hays Branch Station. Aug. 22. The weather during the past week has been hot and windy, with an average maximum temperature of 98.9 degrees and an average minimum of 66.9. Two light rains of 0.45 and 0.65 inch fell on the 19th and 21st. The kaoliangs and feterita have developed good grain. The early seeded plats and kaoliangs, C.I.Nos. 261 and 328, were harvested on August 20. The yield of grain of the milo and kafir crops has been much lessened by the drought.

All of the corn on the upland was harvested before the rain and very few ears had developed. Half of the varieties on the bottom land were also cut for fodder.

COLORADO:

Akron Field Station. Aug. 22. No precipitation of value has occurred during the past week although very light showers are frequent. In some parts of the surrounding country, however, there has been local rain sufficient to help crops. Thrashing of the varietal plats of winter and spring wheat and emmer was completed today. Yields have been good; winter wheat will average over 20 bushels per acre, and spring wheat will be somewhat less. The quality of the grain is generally good, although some of the poorer varieties are shriveled, and there is a small per cent of bunt in a few varieties. Nursery harvest is practically complete, and some thrashing has been done.

SOUTH DAKOTA:

Bellefourche Experiment Farm (Newell). Aug. 24. Thrashing has been somewhat delayed by wind and light rains. The spring grains on the dry land are very poor in quality and yield. The winter grains are yielding fairly well but the quality is not nearly so good as it was last year.

Highmore Substation. Aug. 22. The weather continues hot and dry. The early kaoliangs, C.I. Nos. 328 and 261-4, are ripening. Nursery thrashing is well started and most yields are good. The early seedings of winter grains will be made next week.

From the present prospects, corn will not make nearly as good yields as kaoliang.

MINNESOTA:

State Experiment Station (University Farm, St. Paul). Aug. 25. Maximum temperature for the week, 83.5 degrees (Aug. 21 and 22); minimum, 46 (Aug. 24). Precipitation for the week, 2.83 inches. Harvesting of individual selections from the rust nursery was completed August 18, and machine thrashing of all nursery rows was completed on the 22d.

Dr. Otto Appel of Berlin, and Mr. W. A. Orton, of the Office of Cotton and Truck Disease and Sugar-Plant Investigations, visited the station during the past week.

NORTH DAKOTA:

Dickinson Substation. Aug. 22. Weather during the past week has been unsettled, with alternate showers and clear, drying weather. The maximum temperature was 93 degrees; minimum, 46; precipitation, 1.21 inches. With the exception of late prosos, flax, and sorghums, harvesting has been completed. Thrashing has been begun but is being interrupted by showers.

Some grain in the vicinity is yielding from 12 to 20 bushels per acre. Much of the thrashed grain is slightly shriveled as a result of the hot, dry weather during July.

Messrs. W. W. Burr and G. W. Morgan, of the Office of Dry-Land Agriculture, and Mr. Clark, assistant in western wheat investigations, visited the station during the week. The Board of Directors of the Experiment Station inspected the station last week.

Northern Great Plains Field Station (Mandan).
Aug. 24. Mr. Clark, in charge of flax investigations, sends the following notes on the general condition of crops at the station and in the vicinity:

Thrashing has been delayed by rain. Oats on the rotation plats and a few plats of barley were thrashed on Aug. 22. The oats yielded between 90 and 100 bushels per acre. It had been expected to thrash the flax on the 24th but rain on the previous day again postponed the work.

The major portion of the rod-row nursery was harvested during the week, as well as nearly all head-row seedings. The 100-foot row seedings have not been harvested although many are ripe. Many plant selections have been made.

Trips have been made in the vicinity of the station and crops have been found in very good condition. Particularly heavy stands of wheat and oats have been secured and the corn, which in most cases is still uncut, looks very good. Some good fields of flax were seen, while others were planted too late and are still very green.

Mr. J. A. Clark, assistant in western wheat investigations, spent August 19 at the station, leaving for Fargo on the 20th.

MONTANA:

Judith Basin Substation (Moccasin). Aug. 17. Weather during the past two weeks has been hot and dry, with only 0.05 inch of precipitation. All the cereals have been cut and some of the winter wheat has been thrashed. The grain this year is of poor quality, and farmers report considerable smut in the grain. The winter wheat varieties in acre plats were seeded on the 11th and the winter wheat nursery will be seeded in a few days.

During the past two weeks, Mr. Warburton, in charge of oat investigations, Mr. C. H. Clark, in charge of flax investigations, Mr. J. A. Clark, assistant in western wheat investigations, and Messrs. W. W. Burr and J. S. Cole, of the Office of Dry-Land Agriculture, visited the station.

UTAH:

Nephi Substation. Aug. 23. The weather during the past week has continued dry and warm, with a maximum temperature of 96 degrees (Aug. 15 and 16); and a minimum of 46 (Aug. 17 and 18). There has been no precipitation. The maximum evaporation for 24 hours was 0.404 inch (Aug. 17). Harvesting of the spring durum wheats and the spring nursery was completed during the past week. Thrashing of winter and spring cereals in field plats has been in progress since August 5 and will be completed the coming week. The average yields obtained from winter wheats in the varietal test of duplicate 1/20 acre plats are as follows:

<u>Variety</u>	<u>C.I. No.</u>	<u>Yield per acre.</u> (Bu.)
Turkey	2998	43.0
Crimean	1437	40.3
Crimean	1436	39.2
Hungarian	2034	38.0
Crimean	1559	37.9
Kharkov	1442	37.7
Roumanian	1662	37.5

<u>Variety</u>	<u>C.I. No.</u>	<u>Yield per acre</u> (Bu.)
Kharkov	1583	37.4
Malakof	2908	37.0
Pesterboden	1564	36.7
(From Oklahoma)	1783	36.5
Bulgarian	2048	36.0
Armavir	1355	35.5
Weissenberg	1563	35.5
Alberta Red	2979	35.0
Crimean	1432	34.8
Turkey	1571	34.7
Banat	1560	34.7
Bacska	1562	34.5
Ghirka	1438	34.2
Uita	1439	33.7
(From Missouri)	1756	33.4
Servian	1676	32.9
Crimean	1435	31.7
Japanese	1787	23.2

The following yields were obtained from the varietal test of winter barley in 1/10 acre plats:

<u>Variety</u>	<u>C.I. No.</u>	<u>Yield per acre.</u> (Bu.)
Utah	592	39.8
Tennessee	257	50.9
Bulgarian	521	59.0
Turkestan	711	61.7
Gatami	575	43.5

The highest yield of Boswell winter oat was obtained in the rate-of-seeding test; 61.6 bushels per acre being the yield from the 8-peck rate. In the rate-of-seeding test with Utah winter barley the highest yield, 56 bushels per acre, was obtained with the 8-peck rate.

OREGON:

Eastern Oregon Dry-Farming Substation (Moro).

The following report covers the period from August 10 to 20:

The weather during most of the period has been very warm and there has been no precipitation. The minimum temperature has been 43 degrees (Aug. 16), and the maximum for the year, 100 degrees, was reached on August 13.

Following are some yields of grain varieties which have been thrashed during the period:

WINTER WHEAT:

<u>Variety</u>	<u>C.I. No.</u>	<u>Yield per acre.</u> (Bu.)
Kharkof	1442	31.5
Turkey	(local variety)	30.0
Turkey	1558	29.2
Turkey	1571	29.0
Theiss	1561	27.5
Crimean	1437	26.7
Torgova	1539	26.3
Argentine	1569	26.1
Beloglina	2239	26.0
Weissenberg	1563	26.0
Bacska	1562	25.9
Kharkov	(Akron Sel. 6p4)	25.0
Alberta Red	2979	24.8
Ghirka	1438	24.5
Purple Straw	1915	24.5
Rieti	2942	22.9
Armavir	1355	21.6
Zimmerman	2907	21.6
Crimean	1432	21.0
Gold Coin	2996	20.0

WINTER BARLEYS:

Texas Winter	554	59.4
"O. A. C."		53.8
Wisconsin Winter	519	53.7
Maryland Winter	518	51.7
Tennessee Winter	257	49.0
Utah Winter	592	35.0

WINTER OATS:

<u>Variety</u>	<u>C.I. No.</u>	<u>Yield per acre.</u> (Bu.)
Boswell Winter	480	31.0
Cliff	518	54.4

WINTER EMMER AND SPELT:

Red Winter Spelt	1772	54.4
Improved Win. Emmer	3331	30.6
Black Winter Emmer	2337	30.3
Black Winter Emmer	2483	25.0

SPRING WHEAT:

Early Baart	1697	26.7
Karun	2200-1	26.3
Koola	2203-2	25.3
Bobs	2826-1	24.7
Aulieata	2407-2-1-1	24.5
----	2495	24.3
Haines Square Head	2669	23.3
Washington Bluestem	4067	23.0
Saumur	2346-1-1	23.0
Kubanka	1516	22.7
Marquis	4158	22.3
Chul	2227-1	21.5
Wash. Little Club	4066	20.0

Mr. Carleton, Cerealist, inspected the station on August 17 and 18.



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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

SEP 4
1914

September 4, 1914.

FINANCIAL NOTES.

Memorandum No. 101, dated August 1, 1914, entitled "Per Diem in Lieu of Subsistence", contains the following changes in the Fiscal Regulations and memoranda previously published:

Seats in parlor or chair cars may be charged for in addition to per diem allowances. Where an authorization contains a per diem rate of \$3.00 or less, the authorization may designate certain cities in which unusually high hotel rates prevail and provide that the per diem rate shall be increased \$1.00 in such cities. At the increased rate the day shall be considered as consisting of 4 equal parts (the same as under the usual per diem rate) corresponding to breakfast, dinner, supper and lodging, the charges to be made on that basis. Authorizations cannot be written for travel in the United States covering both per diem and actual expenses for subsistence nor for a per diem higher than \$4.00, but may be written for actual expenses in lieu of per diem for the entire trip. Expenses exceeding \$5.00 in any one day will be disallowed.

It is absolutely necessary to have the first and last subsistence expense stated in reimbursement accounts where authorizations cover per diem in lieu of subsistence. If an authorization contains two per diem rates, first and last subsistence item must be given whenever change takes place in the rate.

NOTICES TO FIELD MEN.

All field men at stations where flax is being grown this season are requested to send to C. H. Clark, Office of Cereal Investigations, as soon after thrashing

as is convenient, $1\frac{1}{2}$ to 2 pounds of flax seed from each variety (irrigated and dry-lab'd grown, separately) grown in field plats and 4 ounces from each nursery row.

Field men who are expecting to make either express or freight shipments should see that they have on hand a supply of Departmental bills of lading to use for the purpose.

In order to avoid inconvenience at the field stations, as far as possible the need of supplies should be anticipated. It often takes from 3 to 6 weeks to obtain the articles requested after the order is received at the office.

OFFICE NOTES.

Mr. G. H. Godfrey, assistant in pathology, returned to Washington on September 2, from a trip to the experiment station at Crowley, La., in connection with the work with diseases of rice.

Mr. C. R. Ball, in charge of western wheat investigations, returned to the office on September 4, from an extensive trip through the Western States, where he investigated the methods of wheat culture and inspected the cereal work at the field stations.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Sept. 2. Warm, wet weather has prevailed during the greater part of the past week, with a maximum temperature of 92 degrees (Aug. 29), and a minimum of 59 degrees (Aug. 25). Precipita-

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tion for the week was 5.2 inches, of which 2.66 inches occurred on Aug. 29. Total precipitation for the month of August, 7.47 inches. The fanning and grading of winter oats will be completed in a few days.

LOUISIANA:

Crowley Rice Experiment Station. Aug. 15.
Mr. Chambliss, in charge of rice investigations, arrived at the station on the 17th.

The harvesting of Honduras rice in this vicinity is well under way. The frequent rains during the week greatly retarded this work.

During the week the station was visited by two rice farmers from Gridley, Calif.

TEXAS:

Amarillo Cereal Field Station. Aug. 29. The weather for the past week has been very pleasant, although this afternoon it is sprinkling and it has been necessary to suspend thrashing for a time. The thrashing of small grains has been pushed as rapidly as good work would permit and is nearly finished, there being about 20 plats of oats and 7 plats of proso and millet yet to thrash. The best yields for the different grains are about as follows:

<u>Variety</u>	<u>C.I. No.</u>	<u>Yield per acre</u> (Bu.)
Black Winter emmer	3331	31.20
Tennessee Winter barley	257	37.50
Turkey winter wheat	1558	26.75
Marouani durum wheat	2235-I	15.66
Frete common spring wheat	1596	15.50
Red Algerian oats	286	44.68

The grain-sorghums are being harvested and, in spite of the drought through June and July, some of the dwarf milo and dwarf kafirs will make very good yields, especially in the double-spaced rows.

The sessions of the Panhandle Farmers' Short Course were well attended and many instructive lectures and talks were given. There seemed to be more genuine interest at this short course than at previous agricultural meetings held here.

Texas Substation No. 4. (Beaumont). Aug. 29. Maximum temperature for the week was 92.5 degrees (Aug. 29); minimum, 71 degrees (Aug. 23, 24 and 25). The rainy weather has continued, precipitation occurring on 5 days, with a total of 3.54 inches. The humidity has been high, reaching 100 degrees on the 23d. Harvesting of the earliest rice was begun this week. Most of the varietal plats of corn were also harvested.

OKLAHOMA:

Woodward Field Station. Aug. 29. The maximum temperature for the week was 97 degrees (Aug. 22), minimum, 60 degrees (Aug. 29). Precipitation was 0.67 inch, and the wind velocity 6 miles per hour.

A 10 h. p. electric motor has been installed, which furnishes power for thrashing, seeding broomcorn, baling, etc. Part of the broomcorn brush has been seeded. The brush is in good condition, although some damage was done by the damp weather. All the early milo plats have been cut and shocked.

The corn ear worm is damaging the late grain-sorghums, although the early plantings were not injured by these insects.

KANSAS:

Hays Branch Station. Aug. 29. A good rain has fallen today, which will insure a normal ripening of the later grain-sorghums. The later seedings of kaoliang, feterita and the durra-kafir hybrids are ready for harvest, and Pink kafir, Red kafir (C.I. No.356) and the two early white kafirs are ripening.

Yesterday (Aug. 28) was sorghum day at the station, but, on account of thrashing and the proximity of fall seeding, only a small number of farmers attended.

Professors Cochel, Kenney and Cunningham, of the College of Agriculture at Manhattan, and District Agents Boys and Guild inspected the station during the past week.

COLORADO:

Akron Field Station. Aug. 25. Mr. Nuckolls, an instructor in the agronomy department of the Agricultural College, visited the station last week. Superintendent O. J. Grace has returned from a trip into South Dakota, and Mr. A. E. Seemans, assistant in dry-land agriculture, left the station for a trip to Montana on Aug. 22.

WYOMING:

Chevenne Experiment Farm (Archer). Aug. 29. Maximum temperature for the past week was 80 degrees; minimum, 46 degrees. The dry weather which began about June 15 continued until Aug. 25, when a very heavy precipitation of 1.44 inches occurred in $1\frac{1}{2}$ hours.

Thrashing is progressing quite rapidly in spite of the wet weather. Following are some of the yields which have been obtained from the different grains:

<u>Variety</u>	<u>C.I. No.</u>	<u>Yield per acre</u> (Bu.)
Turkey wheat	2998	13.7
Arnautka durum wheat		
(12 check plats)	1493	12.3
(2-acre increase field)		9.0
Swedish Select oats	134	26.7
Kherson oats (7 check plats)	459	26.6
(5-acre increase field)		25.7
Ouchac barley	658	16.3
Hannchen barley (5 check plats)	531	15.1

The grain-sorghums are practically fully headed, but it is doubtful whether any of them will mature, as the weather is getting quite cool, especially at night.

NORTH DAKOTA:

Dickinson Substation. Aug. 29. The weather during the past week has been cold, cloudy and misty, which has interfered considerably with thrashing. The maximum temperature was 82 degrees; minimum, 31 degrees; precipitation, 0.54 inch. On the morning of Aug. 26, a frost, which was quite general on low ground in this region, did some damage to prosos, corn, and sorghums, while late corn and garden vegetables were considerably injured. Thrashing of fall grains, both in the nursery and in the varietal plats, is nearly completed. Fall rye has been sown and the winter wheat varieties will be sown early next week.

Williston Substation. Aug. 31. Maximum temperature for the week was 87 degrees; minimum, 31 degrees; precipitation on Aug. 24 and 25, 2.23 inches. The following table gives the precipitation from May to August, inclusive:

		<u>Normal</u>
May	1.21 inches	2.26 inches
June	7.98 "	3.57 "
July	2.32 "	2.03 "
August	3.55 "	1.31 "

Harvesting has been completed on the station, but no thrashing has been done. Throughout the surrounding farming districts practically all grains are harvested, with the exception of flax. A heavy frost occurred on Aug. 26, which damaged most of the corn in the vicinity so badly that it has been necessary to cut it. The corn on the station was only slightly injured, that on the lower ground suffering more than that on the higher.

In the Newsletter of August 21 it was stated that, because of a shortage of labor, some of the plats of flax at the Williston Substation were badly infested with

Russian thistle. As a matter of fact, when stand counts were made on these varietal plats it was found that the stand ranged from 38,000 to 223,000 plants to the acre. Because this lack of uniformity in stand was sufficient to make the yields valueless for comparison, it was decided that the labor required to keep them clean would have been greatly in excess of the value of the test.

Mr. Ball, in charge of western wheat investigations, visited the station on August 29.

MONTANA:

Judith Basin Substation (Moccasin). Aug. 31. The weather still continues dry, the precipitation for August being only 0.64 inch. There was a slight frost on the night of Aug. 25, but it was not severe enough to damage the corn and potatoes. Thrashing of the plats was completed on August 29, and during the coming week the increase fields of Kharkov winter wheat, Sixty-Day oats and White Smyrna barley will be thrashed. The yields are lower and the grain of poorer quality than last year. Winter wheat is yielding from 25 to 32 bushels per acre, spring wheat from 20 to 26 bushels, oats from 50 to 60 bushels, barley from 40 to 50 bushels, and flax from 10 to 15 bushels.

Mr. Ball, in charge of western wheat investigations, spent from August 22 to 29 at the station, studying the new types in the spring wheat nursery.

UTAH:

Nephi Substation. Aug. 29. Dry, warm weather has continued during the past week, with a maximum temperature of 90 degrees (Aug. 24); and a minimum of 45 degrees (Aug. 26). Precipitation for the week, 0.05 inch. Thrashing of field plats was completed during the past week, and the nursery will be thrashed during the coming one. Peas in rotation and varietal test were harvested. Corn and potatoes in rotation and varietal tests are looking well.

CALIFORNIA:

Biggs Cereal Field Station. Aug. 27. The weather has been cool and rice is growing slowly. The crop is about one week later than last year. The Italian and some of the Chinese rices will be harvested about Sept. 8, but the main crop will not be ready for harvest till about Oct. 15.

Dr. Humphrey, cereal pathologist, visited the station on the 19th. Mr. Carleton, Cerealist, was at the station on the 24th and 25th.

Rice is attracting as much attention in the Sacramento Valley as in 1913. The crop at Willows and Colusa is in good condition and good yields are expected. Some of the late-seeded rice near Biggs may not mature. The rice mills at Biggs and San Francisco are being remodeled and it is expected that they will be in first class condition to handle the crop this year. There is considerable talk of other mills being erected but as yet nothing definite has been done.

OREGON:

Harney Branch Station (Burns). The following report covers conditions from August 1 to 25:

Maximum temperature for the period, 99 degrees (Aug. 13 and 14); minimum, 28 degrees (Aug. 17); no precipitation. The frost of Aug. 17 and 18 killed back corn and potatoes and injured the unripened grains, peas and the alfalfa. Harvesting is now practically completed and thrashing will commence as soon as it is possible to get an engine in from the railroad.

Mr. Carleton, cerealist, and Mr. Ball, in charge of western wheat investigations, were recent visitors at the station. On Aug. 8, a roundup meeting was held at the station, with an attendance of about 300 people.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

SEP 11

1914

September 11, 1914.

FINANCIAL NOTE.

The printed instructions on the transportation order-books to send in the carbon copies of orders immediately after ticket is purchased must be complied with. They should be sent to this office to be transmitted to the Office of Records.

NOTICE TO FIELD MEN.

All shipments of freight intended for the office should be addressed as follows: Department of Agriculture, Bureau of Plant Industry, Cereal Investigations, Washington, D. C. The package should also bear the name of the man for whom it is intended. This is necessary to insure prompt delivery and to avoid confusion in charging the freight. For instance, a package addressed to "Mr. C. W. Warburton, Washington, D. C.," may or may not be promptly delivered to the Department.

OFFICE NOTES.

Mr. J. A. Clark, assistant in western wheat investigations, returned to Washington on September 5, after a short trip through some of the wheat-growing districts in the West.

Dr. Humphrey, cereal pathologist, returned to the office on September 8, after a two months trip through the Western States in the interests of the cereal disease work.

GENERAL RUST NOTES.

Dr. Humphrey gives the following notes regarding the prevalence of rust in several of the Western States:

At Akron, Colo., there was considerable red rust and a very little black rust. It was interesting to note that wheat and oats, as well as other cereals, when affected with rust, showed evidence of markedly increased water requirements.

At Nephi, Utah, there was almost no rust. A number of wheat fields were inspected and in none of these was sufficient rust found to make any appreciable difference in the yield.

At Pullman, Wash., the rust epidemic this year was exceptionally severe, in some cases affecting the wheat seriously. It is probably one of the worst epidemics in the history of the station, notwithstanding the fact that the latter part of the summer was unusually dry. At Mount Vernon, on Puget Sound, eight or ten large oat fields were visited, in some of which the crop will undoubtedly yield as much as 180 bushels per acre. In none of these fields was a single pustule of rust found. At Puyallup, near Tacoma, a considerable quantity of red and black rust was found in the cereal nursery, particularly on some of the soft wheats. In that section there was also some complaint because of the occurrence of oat rust.

At Corvallis, Ore., there was little rust on wheat and oats but a considerable quantity of both red and black rust on barley.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Sept. 9. The maximum temperature for the week, 95 degrees (Sept. 2);

minimum, 50 degrees (Sept. 9). There has been no precipitation, but the fall crops have been materially benefitted by the heavy rainfall of the previous week.

Cowpeas are now maturing and the crop is excellent. Late potatoes are also looking quite promising. Indications are that corn will not make much more than 50 per cent of a crop.

TEXAS:

Amarillo Cereal Field Station. Sept. 5. The weather during the past week has been hot and dry, with a maximum temperature of 94 degrees, and a minimum of 56 degrees. The row-crops not yet matured are suffering from lack of moisture. Thrashing of the field plats of small grains was completed September 1, and nursery thrashing will be finished in about three more days.

Some of the cowpeas have been cut and placed in cocks. A sled cutter was devised that does the work very satisfactorily.

Dr. Humphrey, cereal pathologist, visited the station during the week.

Texas Sub-Station No. 4 (Beaumont). Sept. 5. Maximum temperature for the week was 95 degrees (Sept. 3 and 5); minimum, 68 degrees (Sept. 5). Precipitation occurred on 4 days and totaled 1.16 inches. Rice harvest is well under way in this locality. There has been a little loss in the shock due to wet weather.

The varietal plats of corn were harvested this week. The varieties varied in moisture content, and therefore, the field weights are not an accurate basis for the computation of yields. These weights ranged from 4 to 60 pounds to the plat (approximately 1/18 acre), and the check variety averaged 54.5 pounds.

COLOPADO:

Akron Field Station. Sept. 5. The past two weeks have been generally favorable for thrashing, and all field plats are thrashed, with the exception of the grain-sorghums. Brown Kaoliang, C. I. No.328, is ripe. Thrashing of the winter nursery is progressing rapidly. The sowing of winter wheat will begin soon. The moisture supply is deficient, but germination will probably not be retarded greatly. Most of the winter wheat has been cleaned and tested and the tests run low as a rule, being about 58 pounds per bushel. The grain will have to be treated this year, which has not been necessary before.

WYOMING:

Cheyenne Experiment Farm (Archer). Sept. 5. The thrashing of field plats was completed September 4. The durum spring wheats averaged from 2 to 3 bushels more per acre than the common spring varieties. The early oats exceeded the medium-early or late varieties in yield. The two-rowed barleys yielded a little better than the six-rowed hulled varieties, while the hull-less varieties gave the lowest yields. The highest yield of flax was 6.7 bushels per acre for two check plats of Wyoming Common and for N. Dak. Resistant #52, C.I. No.8. Five 1/55-acre flax plats sown with untreated seed yielded as well as or a little better than the corresponding treated 1/10 acre plats. In the time-of-seeding test with flax the June 1st seeding gave the highest yield (5.4 bu.) and in the rate-of-seeding test the 20-pound rate gave the highest yield (6 bu.). The yields of proso were quite low, due largely to the fact that a large amount of seed was shelled and eaten by birds. It was also necessary, because of the wet weather, to turn the proso shocks twice before thrashing and each handling caused considerable loss of seed. Kursk millet, S. Dak. Nos. 78 and 79, yielded 16.3 and 10.9 bushels per acre, these yields being considerably higher than those of the proso varieties.

NORTH DAKOTA:

Dickinson Substation. Sept. 5. The weather during the past week has been variable, with some damp weather that interfered with thrashing. The maximum temperature was 87 degrees; minimum, 35 degrees; precipitation, 0.06 inch. The best yielding variety of winter wheat was Beloglina, which yielded 14 bushels per acre, while Kubanka No. 8, C.I. No. 4063, a spring durum, grown in the same series, yielded 19 bushels per acre. Winter rye is coming up nicely. Field plats of winter wheat are sown, and the sowing of the winter wheat nursery is partly completed.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

SEP 18

1914

September 18, 1914.

FINANCIAL NOTE.

A memorandum received from the Chief of the Bureau states that owing to complications that have developed affecting the authorization of per diem allowance in lieu of subsistence in connection with travel in the field work of the Bureau, it appears advisable to handle this work in the future through reimbursement of actual expense for travel and subsistence. All future requests for letters of authorization will be upon this basis, and all existing letters authorizing per diem allowance in lieu of subsistence extending beyond September 30 will be amended to the actual expense basis. Therefore, employees in the field will secure subvouchers, as required by the Fiscal Regulations.

OFFICE NOTE.

Mr. Godfrey, assistant in pathology, left Washington on September 17, for a short trip through certain parts of Maryland, for the purpose of investigating the prevalence of a devastating corn disease and collecting diseased material for study in the laboratory.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Sept. 16.
Unusually cool weather for this season of the year has prevailed during the past week, with a maximum temperature of 72 degrees, and a minimum of 44 de-

grees. Precipitation of 0.26 inch occurred on Sept. 12. Weeds were removed from the rice plats on Sept. 15. Seed of barleys to be grown in field plats has been treated with formalin for covered smut.

TEXAS:

Amarillo Cereal Field Station. Sept. 11. Thrashing of the small grain nursery was finished September 10. It required the time of two men for 19.5 days to complete this work.

Texas Sub-Station No. 4 (Beaumont). Sept. 12. Maximum temperature for the week, 95.5 degrees (Sept. 11); minimum, 68.5 degrees (Sept. 7); precipitation, 0.07 inch (Sept. 12). The earlier varieties of rice in the increase plats headed this week, and the rice in the rotations is also headed.

Mr. Chambliss, in charge of rice investigations, visited the station this week.

OKLAHOMA:

Woodward Field Station. Sept. 12. Maximum temperature for the week was 98 degrees (Sept. 5); minimum, 68 (Sept. 10); precipitation, 0.17 inch; hourly wind velocity, 9.7 miles. The early grain-sorghums have been thrashed and the yields are not so high as was expected. Many varieties, however, did well notwithstanding the extreme dry weather. The broomcorn brush has been cleaned and much of it is high class.

Mr. Rothgeb, assistant in broomcorn investigations, and Mr. C. A. Burmeister, of the Office of Dry-Land Agriculture, visited the station and attended the Woodward County Fair this week.

Mr. R. N. Miller, who has been in charge of the work of this office on the station since August 7, has been transferred to the Office of Farm Management. He left the station on September 16 to begin work in the state of Washington for that Office in cooperation with the Washington State Agricultural College.

WYOMING:

Cheyenne Experiment Farm (Archer). Sept. 13. The weather is very cold, a minimum of 32 degrees occurring on Sept. 12. Today there has been snow and rain which will delay the filling of the silo which it had been expected to do Sept. 14. The plats of winter wheat were seeded on Sept. 8.

Fall plowing on the D. L. A. rotation plats is nearly all completed and the winter wheats sown.

SOUTH DAKOTA:

State Experiment Station (Brookings).
The following notes are taken from the Newsletter of the Agronomy Department of the State College of Agriculture:

The past season has been a very successful one. Yields have been good at all points except Cottonwood and remarkably good there considering the weather conditions. Prospects seem favorable for continued expansion and growth of the experimental work, both on the stations and through the Experiment Association which is steadily growing and now has members in nearly every county.

The field days held at Eureka and Highmore, on August 25 and September 4, respectively, were a success in every respect. There were about one hundred people present at Highmore, and much interest was shown in the experimental work being done.

NORTH DAKOTA:

Dickinson Substation. Sept. 12. The rainy weather during the first part of the week delayed thrashing, which is not yet completed. Dry weather on Friday and Saturday permitted the thrashing of oat varieties, however. The maximum temperature for the week was 86 degrees; minimum, 45 degrees; precipitation, 0.5 inch. Field plats of winter wheat and rye have emerged and are in excellent condition because of an abundance of moisture. In the winter wheat nursery 730 plantings have been made.

Thrashing in the vicinity of the station has been much delayed by the frequent rains.

Villiston Substation. Sept. 14. Precipitation of 0.38 inch occurred on Sept. 8 and 9, but later in the week thrashing was possible. The varietal plats of wheat and oats have been finished; wheat yields have ranged from 35 to 53.7 bushels per acre, and oats are yielding around 100 bushels to the acre.

UTAH:

Nephi Substation. Sept. 12. Dry, windy, and partly cloudy weather has prevailed during the past week, with a maximum temperature of 88 degrees (Sept. 6 and 7), and a minimum of 33 degrees (Sept. 9). The wind reached an hourly velocity of 7.6 miles on Sept. 11. Thrashing of the winter and spring nurseries has been completed, and cleaning and weighing of varieties is now in progress.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

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SEP 25 1914



September 25, 1914.

OFFICE NOTES.

Mr. Godfrey, assistant in pathology, returned to Washington on September 21, from a short trip through certain parts of Maryland, where he investigated a devastating corn disease and collected diseased material.

Miss Julia M. Cutting, of Vermont, was appointed as stenographer in this office on September 23.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Sept. 23.
Maximum temperature for the week was 93 degrees (Sept. 22); minimum, 49 degrees (Sept. 16). There has been no precipitation. Preparations are nearly completed for the fall seeding. However, it is not likely that seeding will begin until rain occurs as the ground has become quite dry and hard and is in no condition for the making of a suitable seed bed. The modified hot water treatment for loose smut has been applied to all the seed of the wheat varieties to be grown in twentieth-acre and larger plats.

TEXAS:

Texas Sub-Station No. 4 (Beaumont). Sept. 19. Maximum temperature for the week was 94 degrees (Sept. 14); minimum, 60 degrees (Sept. 18). Precipitation

tation on Sept. 14 and 19 totaled 0.12 inch. The earliest varieties of rice in the nursery plats were harvested the first of the week.

Among the visitors at the station this week were Mr. Carleton, Cerealist, and Director B. Youngblood and Mr. W. S. Hotchkiss, of the Texas experiment stations.

COLORADO:

Akron Field Station. Sept. 19. Weather during the past week has continued cool and windy, with frost on Sept. 14, when a minimum temperature of 31 degrees occurred. The grain-sorghums, which were nearly all mature previous to the frost, have been harvested. Thrashing of the nursery is still in progress. The winter nursery will probably be sown next week. The rate-of-seeding tests were sown on the 16th and the seeding of varieties in field plats was completed on the 17th. The seed bed was very dry and some of the grain will probably lie dormant until rain occurs.

WYOMING:

Chevenne Experiment Farm (Archer). Sept. 19. A killing frost occurred on Sept. 13. During the past week the corn on the large field was out and put in the silo. Corn on the Dry-Land Agriculture rotations and the grain-sorghums were also harvested. All harvesting is now completed. The work remaining to be done consists of fall plowing, cleaning and grading of grains, and the weighing of the corn and sorghum varieties when sufficiently dry. The winter wheat varieties seeded on Sept. 8 emerged on the 17th.

SOUTH DAKOTA:

Highmore Substation. Sept. 18. Conditions during the past two weeks have been unfavorable for thrashing, as the weather has been cloudy and damp. No showers of over a third of an inch have occurred, but they have been so frequent that the grain has remained too tough to thrash. All the broomcorn varieties and all the grain-sorghums, except the kafir-durra, have been harvested. Most of the winter grain seedings have been made. The light showers have been sufficient to bring them up but there is not sufficient moisture to carry them through the winter except on fallow ground.

NORTH DAKOTA:

Dickinson Substation. Sept. 19. The weather during the week has been for the most part clear and dry, and therefore favorable for thrashing. The maximum temperature was 94 degrees (Sept. 18); minimum, 34 degrees; precipitation, 0.07 inch. The exceedingly warm weather of the past three days has caused rapid growth of winter wheat and rye, all of which have emerged and show good stands. Thrashing of field plats is completed, except those of flax and proso, and that of the nursery is under way.

With a continuance of the present weather, thrashing in the neighborhood should be practically finished next week.

UTAH:

Nephi Substation. Sept. 19. The weather during the past week has been dry and windy, with no precipitation. Maximum temperature, 85 degrees (Sept. 17); minimum, 31 degrees (Sept. 13). Maximum hourly wind velocity (24-hour average) 10.9 miles (Sept. 15.) Corn in the rotation, and millet, vetch, rape, corn, and milo in the forage test have been harvested. Preparations are being made to commence fall seeding on field plats. The surface soil to a depth of 6 to 8 inches is very dry and rain is very much needed.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

OC1 2

1914

October 2, 1914.

FINANCIAL NOTE

On Form 4-a vouchers the name of the person performing the service must be written identically the same in the two places where it appears. For example, if the initials are used in one place, they must be in the other, or, if the full name be used, it must be so signed in both places.

On the face of the Form 4 voucher the blanks which head the oath or certification are intended for the county and state, and not for the city and county, as appeared on a voucher recently received.

In filling the blanks provided on Form 4 vouchers for the number and date of the authorization under which the expenses are incurred, the number and date of the authorization itself should first be given, followed by the numbers and dates of the amendments thereto, in consecutive order. If, for any reason, this information as to amendments is not at hand, it will be supplied when the account is received in the Office.

OFFICE NOTES.

Mr. Charles H. Clark, in charge of flax investigations, returned on September 24 from his summer's field work in the flax growing area of the west.

Mr. A. A. Potter, assistant pathologist, returned to Washington, on September 30, after three months spent in field investigations of cereal diseases, chiefly corn and sorghum smuts.

Beginning with this issue, the Newsletter will appear every two weeks until March 31.

FIELD NOTES.

VIRGINIA:

Arlington Experiment Farm. Sept. 30.

Clear, cool weather has prevailed during the greater part of the past week, with a maximum temperature of 91 degrees (Sept. 23), and a minimum of 38 degrees (Sept. 29). A precipitation of 0.44 inch occurred on Sept. 25 and was of material benefit to land which was being prepared for seeding. Total precipitation for September has been only 0.70 inch. The varietal test of winter barley was sown on Sept. 28 and the seeding of the winter oat varieties in field plats was completed today, Sept. 30.

LOUISIANA:

Crowley Rice Experiment Station. Sept. 19.

Maximum temperature for the week was 92.5 degrees (Sept. 14); minimum, 55 (Sept. 27). There was no precipitation. Harvest on the station has progressed rapidly, about two-thirds of the tenth-acre plats being completed. If good weather continues, practically all the rice will be harvested by the end of next week.

TEXAS:

Texas Substation No. 4 (Beaumont).

Sept. 26. The weather during the week was cool, with a maximum temperature of 88 degrees (Sept. 22), and a minimum of 52.5 degrees (Sept. 26). The first four days of the week were rainy, precipitation totaling 2.86 inches, but the wind turned to the north on Thursday, and the last three days were cool and clear. Another round of clearing the ditches of weeds and grass was completed this week. This has been almost continuous work throughout the season, but will probably not require so much time from now on.

Cutting of the Sudan grass forage plats was begun Sept. 25 and completed on the 26th. The Sudan grass Cowpea mixture made a heavy crop,

although the cowpeas were hardly mature enough to be at their best; a variety maturing a week or ten days earlier would make a better combination. The cowpea seed plats in the rotation work have been harvested.

SOUTH DAKOTA:

Highmore Substation. Sept. 25. Weather during the past few days has been excellent, and thrashing is nearly completed. The durum wheats are yielding considerably better than all other groups this season. One selection of Kubanka, C. I. No. 1440, yielded 30 bushels per acre, as compared with 19.7 for the mother variety on an adjoining plat.

From reports received kaoliang is doing excellently over the entire western section of South Dakota, and from present indications the plantings will be greatly increased next year.

NORTH DAKOTA:

Dickinson Substation. Sept. 26. The weather during the past week was mostly fair, with a maximum temperature of 83 degrees; minimum, 32 degrees; precipitation, 0.3 inch. The thrashing of nursery rows is partly completed, and the cleaning of grain has been begun.

Thrashing of grain in the vicinity of the station is nearly completed. Yields range from 10 to 30 bushels per acre of wheat, varying with the amount of damage done by hail.

Williston Substation. Sept. 28. Maximum temperature for the past two weeks was 92 degrees; minimum, 33 degrees; precipitation, 0.16 inch. There has been no frost since the light killing one in the latter part of August, and the corn on the rotation plats is still standing unhurt. Thrashing of all but the nursery cereals has been in progress during the past two weeks, and the last of it is being done today. The weather has been ideal for thrashing and throughout the surrounding country the work is progressing favorably.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

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OCT 16 -1

1914

October 16, 1914.

FINANCIAL NOTE.

Attention is invited to the following resolution, presented by the General Supply Committee, which has been transmitted to this Department by the Assistant Secretary of the Treasury:

"It is recommended that the Secretary of the Treasury request the heads of the several executive departments and independent Government establishments having field services, where work is conducted in conjunction with the Washington offices which requires the use of cards, filing equipment, or other office equipment which has been standardized, to use in the field service the sizes upon which the Government has standardized in the Washington offices, as this is the only means by which confusion and embarrassment will be avoided."

In accordance with this memorandum the Bureau Committee on Supplies instructs that all office furniture and equipment in the field be purchased under contract. It will, therefore, be necessary to send to this office full descriptions of such articles when needed; purchase will then be made of articles as near those desired as can be obtained under the current contract.

CORRECTIONS.

In the list of yields obtained from the wheat varieties at Arlington Farm, which appeared in the Newsletter of Aug. 7, C. I. No. 1944 is given as Little Club. The wheat grown at Arlington under this number is, however, a selection from this variety and is entirely different from Little Club. A different number and name will be given to this wheat hereafter.

In the first paragraph of the financial note, which appeared in the Newsletter of Oct. 2, the "Form 4A voucher" referred to is the subvoucher which accompanies the Form 4 voucher.

OFFICE NOTES.

On October 1, Miss Elizabeth C. Lambert, of Pennsylvania, was appointed as stenographer and clerk in this office.

Mr. Carleton, Cerealist, returned to Washington on October 3, from an inspection trip of the field stations at which work is done by the office. He also visited various state experiment stations for consultation with the officials concerning cooperation.

Mr. Rothgeb, assistant in grain-sorghum investigations, returned to Washington on October 10. The season's work with grain sorghums and broomcorn at Amarillo was almost completed by him on Sept. 28, on which date he went to Woodward, Okla., where he finished the work with these crops. On October 5 he left for Washington, stopping en route at Wichita, Kans., to confer with broom manufacturers and warehouse men in regard to the broomcorn crops of 1914.

Mr. Rothgeb reports the grain-sorghum crop at Amarillo, Tex., above the average this season, while the broomcorn was practically a failure. This was the first season in which broomcorn and grain-sorghum work was done at the Woodward station, and although the yields of the grain sorghums were not high they were considered very satisfactory under the existing conditions. While the brush of the broomcorn was damaged to some extent by the severe hot weather at the beginning of the heading period, the yields were high and good results were obtained, especially from the late plantings.

FIELD NOTES.

VIRGINIA:

Arlington Experimental Farm. Oct. 14. The maximum temperature for the past two weeks was 85 degrees (Oct. 10); minimum, 38 degrees (Oct. 2); precipitation, 0.32 inch. The winter oat nursery was seeded October 1 and 2 and the barley nursery on October 3. Despite the dry weather, winter barley and oats in both field and nursery plats have emerged and are making some growth. The seeding of winter wheat in field plats was completed October 13 and, if the weather remains fair, seeding in the nursery will be completed in a few days. The grain-sorghums in the environmental experiment were harvested on October 2.

TEXAS:

Texas Sub-Station No. 4 (Beaumont). Oct. 3. Maximum temperature for the week was 83 degrees (Oct. 3); minimum, 53.5 (Sept. 27). There has been no precipitation. Many of the nursery rices, including the Honduras check plats, were harvested this week. Plowing was begun on the land that had been in the varietal test with corn, and the sudan forage plats were harvested.

Oct. 10. The maximum temperature for the week was 89 degrees (Oct. 10); minimum, 63 degrees (Oct. 6); precipitation, 0.10 inch. Harvesting of the rotation rice plats was begun during the week, and some plowing was done.

KANSAS:

Hays Branch Station. October 2. The precipitation during the month of August was nearly an inch below normal and September records show only 0.6 of an inch. Wheat on commercially and continuously cropped land cannot long survive without rain and hundreds of acres are being redrilled by the farmers. The seeding of the winter grains is practically completed, and the fallow is in good shape to germinate all the grain and maintain it.

Dean Jardine and Professor Reed, of the Agricultural College at Manhattan, visited the station on October 1.

COLORADO:

Akron Field Station. Oct. 1. The weather continues dry and the winter seedings are not germinating well. Some of the seed will not emerge until precipitation occurs. Thrashing of the spring nursery is completed, and the work of weighing the grain and working up the results of this season's crop data is now in progress. The seeding of the winter nursery has been completed.

Most of the reports received from the farmers are to the effect that the yields this year are better than expected. The weather has been ideal for thrashing and the grain is going to the elevators in good condition.

WYOMING:

Cheyenne Experiment Farm (Archer). Oct. 3. The month of September has been very dry, the precipitation being considerably below normal. The weather has been ideal for farm work, however. The only frost to date occurred Sept. 13. A good stand of all varieties of winter wheat has been secured, and at present all plots appear to be in a healthy condition. Weighing of the grain-sorghums and the cleaning of grain has been completed. There is some fall plowing to be done but it is thought best to wait until rain occurs before attempting it.

SOUTH DAKOTA:

Bellefourche Experiment Farm (Newell). Oct. 10. Showers occurred during the week, with a total precipitation of 0.32 inch. This has partially moistened the surface mulch, so that a part and perhaps most of the grain already sown on the dry land may germinate. The varietal test, rate-of-seeding test, and part of the date-of-seeding test have been sown. Owing to the extreme dryness the fall nursery has not yet been sown. Except for a few scattering plants, the wheat in the time-of-seeding test, sown Sept. 14, has not emerged. Thrashing of all grains, except the kaoliangs, is completed, and the remaining work consists of the weighing, determining bushel-weights, and cleaning of the grain from the nursery rows.

NORTH DAKOTA:

Dickinson Substation. Oct. 5. The weather during the week was clear and unusually warm, with a maximum temperature of 87 degrees and a minimum of 45 degrees. There was no precipitation. Stand notes are being taken on the winter wheat nursery and have been taken on the larger plats of winter grain, using the 1/4000-acre frame. The stand is uniformly good. The areas on which the counts were taken were marked with stakes in order that the same areas might be counted in the spring. The yields from the varietal plats of spring wheat are given below in order of yield. The yields of all varieties were greatly reduced by hail.

<u>Variety</u>	<u>C.I.No.</u>	<u>Yield per acre</u> (Bu.)
Kubanka	1440	14.2
Marquis	3641	14.0
Durum No. 1	3320	13.6
Velvet Chaff	3318	13.4
Kubanka No. 8	4063	13.0
Red Fife	3081	12.9
Power Fife	3697	12.3
Arnautka	4064	11.6
Ghirka	1517	11.3
Ghirka No. 4	—	11.3
Red Fife	3329	10.3
Crossbred Bluestem	3314	10.1
Rysting Fife	3023	10.0
Glyndon Fife (Minn. 163)	2873	9.3
Huron	3315	9.2
Manchuria	2492	8.4
Haynes Bluestem (Minn. 169)	2874	8.3
White Fife	3319	7.6
Preston	3328	7.3

Several reports from the surrounding community are to the effect that Marquis wheat is yielding considerably higher than other wheats.

Williston Substation. Mr. Babcock sends data showing that the following varieties of wheat, oats, and barley have made the highest yields at Williston the past season:



Wheat

<u>Variety</u>	<u>C.I.No.</u>	<u>Yield per acre</u> (Bu.)
Taganrog	1570	54.6
Kubanka	1440	53.8
Marquis	3641	52.5
Huron	3315	52.2
Power Fife	3697	51.3
Buffum No. 17 (winter)	3330	17.1

Oats

Lincoln	738	124.3
Abundance	731	123.9
Golden Rain	493	123.3
Silvermine	714	120.7

Barley

Manchuria	739	76.6
Hannchen	531	72.9
Manchuria	882	71.3
Hanna	203	66.7

Miscellaneous

White Spring emmer	1524	85.0
" " spelt	2968	70.6
Spring rye	169	32.3
Black Voronezh proso	16	29.0
Kursk millet	----	38.0

The average yield of six durum wheat varieties was 50.1 bushels; of six fifes, 48.1 bushels; five bearded fifes, 46.2 bushels; and four bluestems, 44.7 bushels. The average yield of seventeen oat varieties was 104.1 bushels. The average yield of eight varieties of six-rowed barley was 59.8 bushels, and of six varieties of two-rowed barley, 60 bushels.

In the date-of-seeding test with all three crops, sowing on April 15 gave higher yields than sowing on May 1 or May 16. There was considerable variation in the results of the rate-of-seeding test but in general the higher rates produced the greater yields.

CALIFORNIA:

Biggs Cereal Field Station. Oct. 9. The weather has been unusually cool during the past two months, which has delayed the ripening of rice for at least two weeks. Harvest will start in about ten days. It is expected to seed the fall cereals about the first of November.

NEWSLETTER
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BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

OCT 30
1914

October 30, 1914.

PUBLICATIONS

Department Bulletin No. 137, entitled "Some Distinctions in Our Cultivated Barleys With Reference to Their Use in Plant Breeding", by Mr. H. V. Harlan, agronomist in charge of barley investigations in this Office, was published on October 15.

During the past week page proof has been read of Departmental Bulletin No. 33, entitled "Cereal Experiments at Dickinson, N. Dak.", by J. A. Clark, assistant in western wheat investigations, and will shortly be published.

A short article entitled "Growing Winter Oats in the South" was sent through the Office of Information, for publication in the newspapers of South Carolina, Georgia, Northern Florida, Alabama, Mississippi, Louisiana, and South-eastern Texas, during the current week.

NOTICES FOR FIELD MEN

The Office now has four oak filing cabinets available for transfer to any field station desiring same. Each cabinet has a capacity of four drawers - 2 wide by 2 high - for filing 4 x 5 cards. Shipment will be made on request.

Field men not already informed in the matter are hereby notified that all employees of the Department on an annual or monthly appointment, except those who receive merely a nominal sum in return for their services, are entitled to annual leave of $1\frac{1}{2}$ days for each month's service, said leave being cumulative for the calendar and not the fiscal year. A supply of leave slips will be furnished on request.

OFFICE NOTES.

Mr. Chambliss, agronomist in rice investigations, returned to Washington on October 17, after a trip of eight weeks through the rice-growing areas. He remained for three and a half weeks at the experiment station at Crowley, La., and for two weeks at the station at Biggs, Calif.

On October 17, Mr. Jenkin W. Jones, superintendent of the Cheyenne Experiment Farm, at Archer, Wyo., arrived at Washington, where he will prepare his report on the work done at that station.

On October 22, Mr. Parker, assistant in cereal disease work, left St. Paul, Minn., where the greater part of his summer's field work was carried on, and spent the 23d at the experiment station at Madison, Wis., in conference with Prof. L. R. Jones and other officials. While there he gave a short talk before the plant pathology seminar on the wheat breeding work to secure rust-resistance which is being carried on at the Minnesota station. Mr. Parker arrived in Washington on October 26.

FIELD NOTES

VIRGINIA:

Arlington Experimental Farm. Oct. 28.

Fair weather has prevailed during the greater part of the past two weeks, with a maximum temperature of 73 degrees (Oct. 22), and a minimum of 26 degrees (Oct. 28). Precipitation for this period has been 1.39 inches, of which 1.28 inches occurred on the night of Oct. 15 and was of material benefit to fall-seeded grains. Winter wheat in both field and nursery plats has emerged and good stands were obtained of most varieties. The varieties of rices headed about October 15.

Fall plantings of the cereal disease nursery have been completed. These include studies in a number of the diseases of cereals induced by imperfect fungi, and date-of-seeding experiments with a view to ascertaining the influence of soil moisture and temperature on wheat seedlings affected by the stinking smut organism.

TEXAS:

Amarillo Cereal Field Station. Oct. 24.

The weather for the most part has been cloudy, with a maximum temperature of 87 degrees and a minimum of 42 degrees. The precipitation of 3.89 inches will insure the germination of the wheats which have been seeded recently. The varietal test, rate-of-seeding test, and a greater part of the nursery plats have been sown at this date.

Newspaper reports show that the precipitation was general over the entire Panhandle. Many farmers have been waiting for such an opportunity, and doubtless a considerable acreage of wheat will be sown in the near future.

Mr. John F. Ross returned to the station on October 21, from a trip to Wichita, Kans., at which place he visited the International Dry Farming Congress and aided in the demonstration of the Departmental exhibit. He also made a trip to Guymon, Okla., where a Farmers' Institute was held Oct. 21 to 24, inclusive.

Texas Sub-Station No. 4 (Beaumont). Oct. 17.

The maximum temperature for the week was 86 degrees (Oct. 12), and the minimum, 42 degrees (Oct. 15 and 17). The total precipitation was 0.58 of an inch, and occurred on three days. The greater part of the work this week consisted of harvesting the rotation rice plats.

Oct. 24. The maximum temperature for the week was 84 degrees (October 19), and the minimum, 50 degrees (October 18). The precipitation totaled 0.25 of an inch, occurring on three days. During the week the harvesting of the rotation rice plats was completed and part of the cultural plats were harvested. The latest varieties in the rice nursery were also harvested.

KANSAS:

Hays Branch Station. Oct. 22. The precipitation of October 28, which was .95 of an inch, was very local in character and came in such a downpour that the ground was packed and baked and much run-off occurred. Wheat does not look well and is not well advanced. Rain which occurred last night and today should improve conditions..

Some of the neighboring farmers are still re-seeding where poor stands have resulted.

COLORADO:

Akron Field Station. Oct. 19. There has been no precipitation during the past two weeks, and that reported two weeks ago was not sufficient to sprout the grain. At present the ground is quite dry and the date-of-seeding test planted today will probably emerge at the same time as most of the grain planted over a month ago. Examination of the seed in the ground showed that it has not even sprouted as yet. The grain-sorghums were thrashed last week and the yields are good.

SOUTH DAKOTA:

Bellefourche Experiment Farm (Newell). Oct. 19. Maximum temperature for the past week was 82 degrees; minimum, 25 degrees. Precipitation of 0.44 of an inch, in the form of snow, which fell on Oct. 11 melted the same day and thoroughly moistened the soil. Seeding of the varietal plats of winter wheat has been completed. The entire wheat nursery, including 152 rows 132 ft. long, beside a number of head rows, has been sown. Grain sown on Oct. 2 and 3 germinated, and is beginning to emerge. Stands were counted on the irrigated plats of winter wheat varieties, showing 330 to 576 thousands of plants per acre; the plats having been seeded at a rate of 4 pecks. There has been some slight damage by rabbits on these plats.

Oct. 23. Maximum temperature for the past week was 82 degrees; minimum, 32 degrees; precipitation, 1.01 inches. The recent rains have moistened the soil thoroughly and the fall-sown grains are emerging nicely. The grain sown on Oct. 3 emerged as quickly as any of the earlier seedings. The oats grown in the nursery has been weighed and tested and proved to be very poor in both yield and quality, the average weight per bushel being about 22 pounds.

Highmore Substation. Oct. 24. During the past ten days about 1.4 inches of precipitation has occurred. This, followed by warm weather, has put the winter grain in excellent shape to go into the winter, and has germinated the seeds that were in dry soil previously, so that all stands will be excellent this fall. The date-of-seeding test with winter

wheat and rye is being triplicated under the following conditions: on corn ground (with stalks cut high); following cow-peas and navy beans that were in cultivated rows; and on summerfallow. These conditions give protection, due to snow lodging in the corn stalks, or exposure through snow being swept off ground with nothing to stop its drifting, as well as ground with varying amounts of moisture. It would seem that this should give some information in regard to the excessive winter killing that takes place at this station.

NORTH DAKOTA:

Dickinson Substation. Oct. 12. The weather during the past week has been quite cold with several severe frosts. The minimum temperature for the week was 28 degrees; precipitation, 0.12 inch. The thrashing of the nursery and the remaining plats of flax was finished today. The cleaning and storing of seed remain to be done.

MONTANA:

Judith Basin Substation (Moccasin). Oct. 24. The field work for this season is nearly finished. Owing to the unusually fine weather this fall it has been possible to do some plowing, which is quite unusual in this section. All the winter wheat on the station was seeded early. The stands at first were rather non-uniform, but the fall rains germinated all the seed and it will go into the winter in good condition.

UTAH:

Nephi Substation. Oct. 18. The weather the past two weeks has been moderately fair with dry prevailing winds. Maximum temperature, 73 degrees (Oct. 17); minimum, 28 degrees (Oct. 11). During the first ten days of October 1.32 inches precipitation occurred, which put the soil in good condition for sowing of winter grains.

Since the recent storm the grain sown in the time-of seeding test has commenced to emerge. Digging of potatoes is in progress, the highest yield obtained being 640 pounds from a tenth-acre plat. Fall sowing of winter grains in field plats has been completed; also, the planting of winter increase rows.

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NEWSLETTER
OF THE
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BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

NOV 15

1914

November 13, 1914.

PUBLICATIONS.

A second article for publication in the newspapers of South Carolina, Georgia, northern Florida, Alabama, Mississippi, Louisiana, and southeastern Texas, was sent through the Office of Information on October 30th. It is entitled "Winter Wheat in the Gulf States," and is similar to the one mentioned in the Newsletter of October 30th, entitled "Growing Winter Oats in the South."

OFFICE NOTES.

On November 4, Mr. Ralph W. Smith, scientific assistant in charge of the work of cereal investigations at the Dickinson Substation, Dickinson, N. Dak., arrived in Washington to prepare his report on the work done the past year.

Mr. H. H. Laude, collaborator in the rice work at the Texas Substation No. 4, Beaumont, Texas, arrived in Washington on November 10 for the purpose of writing his report on the work of the past year.

During the week of November 9 - 14, in connection with the meeting in Washington of the American Association of Agricultural Colleges and Experiment Stations, the following persons have called at the Office: W. M. Jardine, Dean of the College

of Agriculture and Director of the Experiment Station, L. E. Call, Professor of Agronomy, D. C. Johnson, in charge of Farmers' Institutes, and L. A. Fitz, in charge of Milling Investigations, all of the Kansas State Agricultural College, Manhattan, Kansas.

John R. Fain, Professor of Agronomy, College of Agriculture, Athens, Ga., George Roberts, Professor of Agronomy, and E. J. Kinney, Assistant Agronomist, of the Kentucky Agricultural College, and W. L. Oswald, Plant Pathologist of the College of Agriculture, St. Paul, Minn.

FIELD NOTES.

VIRGINIA:

Arlington Experiment Farm. Nov. 11. The maximum temperature for the past two weeks was 79 degrees (Nov. 4); minimum, 27 degrees (Nov. 7). A precipitation of 0.53 inch occurred on the night of November 8 and was of material benefit to fall-sown grains, especially wheat, which has made but little growth since emerging. Winter oats and barley have made considerable growth and are in fair shape to withstand winter conditions.

TEXAS:

Texas Substation No. 4 (Beaumont) Oct. 31. The maximum temperature for the week was 81 degrees (Oct. 29); minimum, 32.5 degrees (Oct. 28). There was only a trace of precipitation, occurring on the 25th.

Most of the cultural rice plats and part of the increase plats of rice varieties were harvested during the week.

KANSAS:

Hays Branch Station. Oct. 23. The first

killing frost occurred on October 22. The work of thrashing the cereals began on October 27.

COLORADO:

Akron Field Station. Oct. 29. Rain occurring on October 23 and 24 was of much benefit to the fall-sown grains. As a whole, the stands of winter grain are better at present than at any time last year. The stand of grains in the nursery is also good.

In the district surrounding Akron the soil has been too dry for vigorous fall growth. On a recent trip only a few instances were noted in which the plants were advanced enough to give a green color to the fields.

For the four-month period from June 15 to Oct. 15, the precipitation was only 3.46 inches, all in light showers. The heaviest rainfall within these dates was on July 16, when the record shows 0.45 of an inch.

SOUTH DAKOTA:

Bellefourche Experiment Farm (Newell) Oct. 31. The maximum temperature for the week was 73 degrees, the minimum 25 degrees. There was no precipitation.

The remainder of the spring nursery and the prosos were cleaned, weighed and tested. The kaoliangs were thrashed and weighed.

Twenty-four varieties of proso grown in rows 14 inches apart gave an average yield of 6.95 bushels to the acre. The highest yielding variety (C. I. No. 4, White Ural), produced at a rate of 14.8 bushels. Duplicate rows of all varieties thinned to a distance of 8 inches apart in the row showed a decrease in yield of 1.83 bushels per acre due to the thinning. Six varieties of kaoliang and sorgo yielded at an average rate of 205 pounds of grain to the acre. The average yield of 7 varieties of corn, grown in alternate plats with the kaoliangs, was 80 pounds of shelled grain to the acre. Dwarf milo failed to produce seed.

Nov. 7. Maximum temperature for the week was 67 degrees, the minimum, 21 degrees. There was no precipitation. Three more plats in the date-of-seeding test were sown on November 2. The corn fodder, which was grown in alternate rows with the kaoliangs, was hauled in and weighed. Stands were counted in the varietal, rate-of-seeding, and date-of-seeding tests. The stands are all good and fairly uniform. Most of the fall-sown grain is in excellent condition to pass through the winter.

NORTH DAKOTA:

Dickinson Substation. The Dickinson Press of November 7 contains the following weather data for the Dickinson Substation: The minimum temperature for the month of October was 21 degrees (Oct. 23). The precipitation for the month was 0.42 inch, or 0.39 below normal. From January 1 to November 1 the precipitation was 22.2, the highest yet recorded at this station. The previous maximum record is that of 1909, when the precipitation for the entire year was 21.25 inches.

Williston Substation. Nov. 7. The fall has been ideal for thrashing and plowing. Although there has been very little precipitation since August the ground has been in good condition for plowing, and most of the farmers have completed their work. During the past two weeks heavy winds have occurred and several prairie fires around Williston have done considerable damage.

IDAHO:

Aberdeen Substation. Oct. 25. The precipitation since September 15 has been 2.34 inches. The weather has been excellent for the growth of fall wheat. Shallow plantings of wheat made before the rains are doing well, but deeper plantings are not in such good condition.

Fall plowing is in progress. Wheat prices are better this year than ever before in this section of the country but prices of potatoes are down almost to bed rock.

OREGON:

Harney Branch Station. (Burns) Nov. 7.
The fall has been very dry and unsuitable for seeding the winter cereals. The winter nursery, varietal test and rate-of-seeding test were sown October 6 and 7 and have just emerged. A date-of-seeding plat sown on September 5 emerged only 5 days earlier.

Thrashing was completed about October 1 and the weight of yields has been obtained and partly tabulated.

Yields are low this year, principally because of the damage by frost which occurred on July 21 and caused a loss of as much as 75 percent of some of the later cereals and 95 percent of some varieties of peas. Potatoes were almost a complete failure, the vines having been frosted down 5 times between June 5 and August 13. The winter grains were seriously damaged by the frost of June 5 which varied so much in severity with the location of individual plats that it is difficult to say which variety really was best.

Following are the actual and computed yields of the winter wheat varieties:

<u>Variety.</u>	<u>C.I.No.</u>	<u>YIELD PER ACRE IN BU.</u>	
		<u>Actual.</u>	<u>Computed.</u>
Weissenberg	1533	15.00	13.94
Ghirka	1438	16.66	13.83
Turkey	1558	19.33	13.47
Kharkov	1442	12.00	13.30
Turkey	2223	17.00	12.34
Crimean	1559	9.33	12.05
Pesterboden	1534	13.65	10.81
Beloglina	1545	12.33	10.61
Turkey	2998	14.00	10.60
Alberta Red	2979	14.66	10.32
Turkey	Local	15.33	10.27
Dishl's Mediterranean	1585	10.00	9.69
Turkey	Local	9.03	9.03
Koffoid	2997	5.66	4.38
Prohibition	----	4.66	4.27

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

NOV 27
1914

November 27, 1914.

PUBLICATIONS.

The special circulars of the Office of the Secretary bearing the titles "Winter Oats in the Cotton Belt", by C. W. Warburton, and "Winter Wheat in the Cotton Belt", by C. E. Leighty, have just been received in editions of 50,000 copies each. There is now in press another circular on rye in the cotton belt by Dr. Leighty, which, it is expected, will be issued very soon.

FINANCIAL NOTES.

Instructions applicable to field stations, concerning property which is dropped from inventories as being worn out have been received recently. To obtain removal from the inventory of worn-out property outside of Washington, which would not be salable on account of the distance from a possible purchaser or lack of value, or which would not pay for shipment to Washington for disposal, a certificate signed by the officer in immediate charge should accompany the inventory, showing that the article has been broken or destroyed in such a manner as to be of no further value or use to anyone.

Reports are also being received of the deaths of animals which are the property of the Bureau, without certificates of the circumstances causing death. All such reports should be supported by statements signed by the officer immediately responsible and, whenever possible, by a veterinarian, stating the circumstances under which the death took place.

OFFICE NOTES.

Mr. J. H. Martin, scientific assistant in charge of the cereal experiments on the Bellefourche Experiment Farm, Newell, S. Dak., arrived in Washington on November 19 to prepare his report on the work of the past year.

Miss Louise M. Venable, stenographer and typewriter, was appointed on November 19th to take the position made vacant by the resignation, on November 3, of Miss M. E. Roberts.

Mr. H. H. Laude left on the 20th instant to return to his station at Beaumont, Texas.

VIRGINIA:

Arlington Experiment Farm. Nov. 25. The maximum temperature for the past two weeks was 64 degrees (Nov. 13); minimum, 18 degrees (Nov. 24). Precipitation of 1.32 inches and 0.39 inch occurred on November 15 and 16 respectively. The weather has been unusually cold for this time of the year and has checked the growth of all winter grains.

Aluminum ribbon labels have been made for all fortieth-acre and twentieth-acre plats of all winter grains.

KANSAS:

Hays Branch Station. Nov. 3. The thrashing of the grain-sorghums was finished on Nov. 2.

In the vicinity of Hays wheat does not look well. Unless the winter is mild and open wheat will not furnish the usual amount of pasture. The problem of supplying winter feed for animals will again have to be met, as few of the farmers have yet learned the lesson of the past few years.

Nov. 7. The following yields have been obtained from the best plats in each class of the grain-sorghums:

Name.	C. I. No.	Yield per acre.
Dwarf milo.	332	22.2 bu.
Manchu Brown kaoliang.	171	27.2 "
Feterita	182	35.0 "
Durra - kafir hybrid	198-7-3	26.3 "
Red kafir	356	25.5 "
Early Blackhull kafir.	472	29.1 "
Dwarf kafir	340	34.9 "
White kafir	342	22.7 "
Blackhull kafir	335	24.3 "

Nov. 14. The past week has been very favorable for farm work, but entirely too warm for the best growth of the wheat. Much of it on continuously cropped land, especially where sown early, is turning brown from lack of moisture. A slight infestation of Hessian fly has been discovered on the station.

Nov. 21. The pig feeding experiment recently started at the station includes ground kafir in two different rations, whole kafir soaked, kafir in the head, ground milo, feterita, and kaoliang, all checked against corn chop.

SOUTH DAKOTA:

Bellefourche Experiment Farm. (Newell). Nov. 14. Maximum temperature for the week was 65 degrees; minimum, 19 degrees. There was no precipitation. The counting of stands on the remaining grain plats was completed. The final series in the date-of-seeding test was sown on Nov. 14. Winter grain is looking fairly vigorous, although very little growth is now being made.

MONTANA:

Judith Basin Substation (Moccasin). Nov. 12. The weather has continued fine and about 60 acres of land have been plowed. An addition to the granary is being built, which will provide four large bins for the storing of seed grain.

Winter wheat throughout the Basin is in good condition. Most of the farmers have taken advantage of the good weather to seed the land that was cropped this year and the acreage sown is considerably larger than last year.

UTAH:

Nephi Substation. Nov. 13. With the exception of that sown the latter part of October, all the grain has emerged and appears to be in good condition. The soil is very dry and rain is much needed to insure germination of grain this fall.

CALIFORNIA:

Biggs Cereal Field Station. Nov. 9. The work of harvesting and thrashing rice is progressing well. Owing to the soft condition of the ground it has been necessary to cut by hand considerable of the rice. About one-half of the station rices have been thrashed. The yields have been good, ranging from 3,200 to 6,000 pounds to the acre.

Nov. 18. The thrashing of rice was completed today and the yields are even better than were expected. Plowing on rice stubble has been begun but the land is very difficult to plow.

(State) Harvesting and thrashing are progressing nicely. In general the yields are much better than were expected, ranging from 2,000 to 6,000 pounds per acre. Rice is attracting much interest throughout the state, and now that this year's crop has yielded so well, the industry is looked upon with much more favor than ever before.

OREGON:

Eastern Oregon Dry-Farming Substation. (More). Nov. 18. During the month of September there was not enough precipitation to make safe the seeding of winter grains. During the first two weeks of October, however,

there was more than an inch of precipitation -- enough to connect the moisture on the summer fallow. The temperature during October was warm enough to start weeds growing, so that conditions over most of eastern Oregon have been favorable this fall for seeding winter grains. On the station farm seeding was begun on Oct. 15 and all grains sown during that month have emerged with good stands.

The total precipitation for the month of October was 1.48 inches, making the total precipitation from Jan. 1 to Oct. 31 only 9.55 inches. The highest temperature during October was 69 degrees (Oct. 1) and the lowest 32 degrees (Oct. 21).

The following winter grains have been sown:

Winter Wheat:

Varietal test, 24 varieties in triplicate twentieth-acre plats.
Tillage, 50 tenth-acre plats.
Rate and date test, 21 tenth-acre plats.
Environmental experiment, 6 twentieth-acre plats.

Winter Barley:

Varietal test of 13 varieties in duplicate tenth-acre plats.

Winter Oats, Emmer, and Spelt:

Ten varieties in duplicate tenth-acre plats.

Winter Rye:

Four varieties.

Besides the above there are increase sections of winter grains occupying about 18 acres and a small winter grain nursery of 100 head rows and 100 rod rows.

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NEWSLETTER
OF THE
OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,
U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

DEC 11

1914

December 11, 1914.

Owing to the Christmas holidays the next Newsletter will not appear until Saturday, December 26.

PUBLICATIONS.

The special circular of the Office of the Secretary bearing the title of "Rye in the Cotton Belt," by C. E. Leighty, was issued on December 2, 1914.

OFFICE NOTES.

Mr. Geo. A. McMurdo arrived on December 3 from Akron, Colo., to spend several months in the Office to do laboratory work with grains and to write a report of the season's work at the Akron Experiment Farm.

Mr. Stephen Anthony, of the College of Agriculture of the University of Minnesota, was appointed on December 4 as Technologist in Barley Investigations as assistant to Mr. H. V. Harlan.

Mr. H. B. Bruce called at the Office on November 30 in the interests of a committee formed in New York City to assist the French and Belgians in obtaining from the United States stocks of seed of varieties of spring grains suitable for sowing in those countries.

NOTICE TO FIELD MEN.

Clause 8 has been added to the form for application for leave of absence during travel and reads as follows:

"If the leave of absence requested is granted, no greater number of transportation requests will be used than would be required if leave were not taken. Transportation requests will be used only for through tickets between official stops or for tickets covering portions of such trips."

To comply with this recent ruling it will be necessary, when leave en route is desired, to use one of the following methods: (1) Purchase on transportation request through ticket with stop-over privilege. (2) If through ticket can not be obtained, leave may be taken where the second part of the ticket is purchased, but at no other point en route. (3) If stop-over privilege can not be obtained and leave is not desired where the second ticket is purchased, as under "2", cash fare may be paid for one portion of the trip and transportation request used for the other portion, transportation request being used, of course, for the longer part of the trip. When expense account is submitted the cash item should be the amount of the difference between the cost of transportation request used and the through rate between the initial and terminal points of official travel. Leave taken when mileage is used would not seem to come under this restriction.

It is stated that this ruling has been made to reduce auditing and avoid suspensions.

SMUT EXPLOSIONS.

As reported in a previous Newsletter a very unusual number of thrashing machine explosions have occurred during the past summer in Washington and Idaho, supposedly due to the great amount of smut present in the wheat, amounting to an average of 15 per cent of the crop, and to the unusually dry weather. An investigation of the causes of these explosions is being conducted in the most thorough manner possible by the Washington Experiment Station, in cooperation with this Office, and with further help from the Bureau of Chemistry and the Bureau of Mines. It is hoped that both interesting and valuable results may be obtained.

BUREAU LECTURES. 1914 & 1915.

A series of lectures will be held on the dates indicated at 3:30 P. M. in the New National Museum.

- December 12, 1914. - Economic Phases of Plant Industry.
Assistant Secretary Vrooman.
- December 19, 1914. - Rural Credits. Mr. C. W. Thompson.
- January 9, 1915. - Nematology and its Relation to Agri-
cultural Practice. Dr. N. A. Cobb.
- January 16, 1915. - National and State Control of Plant
Diseases. Prof. R. Kent Beattie.
- January 23, 1915. - Handling and Transportation of Perishable
Products. Mr. H. J. Ramsey.
- January 30, 1915. - The Egyptian Cotton Industry in the
United States. Mr. T. H. Kearney.
- February 6, 1915. - Progress in Federal Seed Control.
Mr. Edgar Brown.
- February 13, 1915. - Brazilian Horticulture. (Illustrated.)
Mr. Wilson Popenoe.
- February 20, 1915. - Legumes and their Place in our Agri-
culture. Prof. C. V. Piper.
- February 27, 1915. - Problems of the Wheat Crop.
Mr. M. A. Carleton.
- March 6, 1915. - Bureau Aims in Publications.
Dr. K. F. Kellerman.
- March 13, 1915. - The Farm Management Method and the
Character of the Result Obtained.
Prof. W. J. Spillman.
- March 20, 1915. - The Relation of the Extension Work of the
Department of Agriculture to the States.
Mr. C. B. Smith.
- March 27, 1915. - The Need of a Fuller Utilization of the
Wild Relatives of Plants in Breeding Work.
Prof. W. T. Swingle.

COOPERATION WITH THE GEORGIA STATE COLLEGE OF AGRICULTURE.

Cooperative work in cereal production and breeding was started this fall with the College of Agriculture at Athens, Ga. The investigations consist mainly of varietal, cultural, and fertilizer tests with winter wheat, rye, oats, and barley. The following grains have been sown at Athens and are growing nicely:

Winter wheat, 19 varieties in 1/100-acre plats, 3 varieties in 1/20-acre plats.

Winter rye, 3 varieties in 1/100-acre plats.

Winter barley, 19 varieties in 1/100-acre plats, 3 varieties in 1/20-acre plats.

Winter oats: Varietal test, 15 varieties in 1/100-acre plats and 3 varieties in 1/20-acre plats.
 Preparation-and-method-of-seeding test, 4 1/4-acre plats.
 Date-of-seeding test, 8 1/50-acre plats.
 Fertilizer test, 24 1/50-acre plats, 10 1/40-acre plats, 6 plats of 0.075 acres each.

In addition to these there are 50 rod rows of wheat, 70 rod rows of oats and 900 head rows of wheat, oats, rye, and barley.

At the Ashburn Substation the following winter grains sown on October 29 and 30 were doing nicely on December 1:

Winter wheat, 15 varieties in duplicate 1/50-acre plats, 4 varieties in 1/10-acre plats, 50 selections in rod rows.

Winter rye, 3 varieties in duplicate 1/50-acre plats, 3 varieties in 1/10-acre plats.

Winter barley, 16 varieties in duplicate 1/50-acre plats.

Winter oats: Varietal test, 11 varieties in duplicate 1/50-acre plats and 8 varieties in 1/10-acre plats.
 Date-of-seeding test, 4 1/10-acre plats.
 Fertilizer test, 5 1/20-acre plats.

At the Brooks County Substation, Quitman, the following varieties were sown on November 3 and 4 with a good stand reported on December 1:

Winter wheat, 14 varieties in duplicate 1/50-acre plats, 4 varieties in 1/10-acre plats.

Winter rye, 3 varieties in duplicate 1/50-acre plats.

Winter barley, 9 varieties in 1/50-acre plats, 4 varieties in 1/10-acre plats.

Winter oats: Varietal test, 11 varieties in duplicate 1/150-acre plats.
 Date-of-seeding test, 4 1/10-acre plats.
 Fertilizer test, 5 1/30-acre plats.

FIELD NOTES.

VIRGINIA:

Arlington Experiment Farm. Dec. 9. The maximum temperature for the past two weeks was 67 degrees (Nov. 26); minimum, 30 degrees (Nov. 26). Total precipitation for the same period was 1.85 inches, which has greatly improved the condition of fall-sown grains.

GEORGIA:

State College of Agriculture (Athens) Dec. 7. Rains have been very heavy in this section since Nov. 28. The lowest temperature for November was 14 degrees on the night of Nov. 19. This freeze did considerable damage to the fall-sown grains, many of which were just coming up.

TEXAS:

Texas Substation No. 4 (Beaumont) Nov. 21. The maximum temperature for the week was 74 degrees (Nov. 8); minimum, 28 degrees (Nov. 20). There was no precipitation. The lowest temperature and the lowest relative humidity of the season were both recorded this week. The frost killed tender vegetation, such as sweet potatoes, tomatoes, etc., but did not injure the cane.

KANSAS:

Hays Branch Station. Nov. 30. There has been no precipitation during the month of November, while in October there were only 1.10 inches and in September 0.60 inch. Wheat is suffering from the drought. Farmers are much worried and are inclined to hold back their wheat, daily receipts of wheat at Hays being less than one-fourth as large as a month ago.

The third annual Farmers' and Housekeepers' Short Course at the Ft. Hays Normal School opened on the afternoon of November 29 with a large attendance.

SOUTH DAKOTA:

Bellefourche Experiment Farm. (Newell) Dec. 7. Two inches of snow fell this morning, making a precipitation of 0.13 inch. It is still snowing. None of the grains have made any noticeable growth since about the middle of November and the ground, even on the fallow, was beginning to crack in the alleys between the plats.

NORTH DAKOTA:

Williston Substation. (Report for November) The weather data for the month of November are as follows: The mean temperature for the month was 33 degrees as compared with the normal temperature for the

past 35 years of 25.2 degrees. The maximum temperature for the month was 32 degrees (Nov. 2) and the minimum -7 degrees (Nov. 12). On November 13 there was a light fall of snow followed by about a week of cold weather. About November 20 the ground thawed and plowing was possible for a few days.

Dec. 5. The ground is again frozen and a part of the very light covering of snow that fell on the 1st instant still remains. Mr. Hall, the county agent for Williams County, has arranged a series of agricultural meetings for the winter, the different clubs meeting in their respective districts for two days at a session. The farmers are showing great interest in these meetings and are expressing much appreciation of the work being done by the Williston Substation. A large number are securing for their spring seeding the best grains that have been increased by the substation.

An increase field of 12 acres of Power Fife wheat, C. I. No. 3697, under irrigation produced a yield of 32 bushels per acre. There are also good supplies of Siberian oats, C. I. No. 741, and Williston No. 170 barley, C. I. No. 882, that were grown in increase plots, all of which will be distributed to farmers for seed. Marquis wheat, which was grown to a considerable extent in this part of the State the past season, has given satisfactory results so far as reported.

CALIFORNIA:

Biggs Cereal Field Station. Nov. 24. (State)
The weather continues dry, there having been no rain for about three weeks. The fall has been exceptionally favorable for saving the rice crop. Practically all thrashing has been completed in the Biggs district.

Thrashing is now in full progress in the Richvale and Gridley districts, and about ten days to two weeks will be required to finish the work. Yields on new land are good but rather low on second and third year plantings. Rice is selling at 2 cents per pound rough.

A great deal of interest is now being taken in the rice industry and the crop is generally looked upon with much more favor than in the past.

OREGON:

Eastern Oregon Dry-Farming Substation. (Moro)
Nov. 30. Though weather conditions this fall have been somewhat unfavorable good stands of all winter grains have been obtained. Large areas of winter grains in Sherman County will probably have to be reseeded in the spring. On some of the large fields that were planted early no plants have emerged. There has not been sufficient moisture to do any fall plowing.

(Report for the month of November) Most of the month was dry and cold. There were 25 days when the minimum temperature was below freezing. On five days the maximum temperature did not exceed 32 degrees. The lowest temperature recorded was 19 degrees (Nov. 18); the highest, 59 degrees (Nov. 1). It was the coldest November recorded at the substation, the mean temperature for the month being more than 3 degrees lower than the mean temperature for the same month last year. The total precipitation for the month was 0.88 inch, which occurred on 7 different days, the highest for any one day being 0.30 inch. The precipitation was about half the November normal for the past ten years.

The cold weather has apparently done no damage to winter grains, though they have made very little growth during the month. The latest seeding of winter wheat has not emerged.

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NEWSLETTER

OF THE

OFFICE OF CEREAL INVESTIGATIONS

BUREAU OF PLANT INDUSTRY,

U. S. DEPARTMENT OF AGRICULTURE.

VOLUME VI

DEC 26 1914

1914

December 26, 1914.

PUBLICATIONS.

Farmers' Bulletin 616, Winter Wheat Varieties for the Eastern United States, by Doctor Leighty, was issued on December 12, 1914.

Department Bulletin No. 33, Cereal Experiments at Dickinson, N. Dak., by J. Allen Clark, was issued on December 17, 1914.

Page proof of Department Bulletin No. 157, "Tillage and Rotation Experiments at the Nephi Substation," by Mr. P. V. Cardon, formerly of this Office, was read on December 14.

OFFICE NOTES.

The following memorandum was issued from the Office of the Chief of the Bureau December 7:

"In conformity with the present policy of the Department, which is adverse to salary increases on lump fund appropriations during the continuance of the financial conditions which have so seriously reduced the public revenues, the consideration of recommendations for lump fund promotions usually made prior to January 1, will be deferred until towards the end of the fiscal year. Heads of offices will, therefore, not be called upon for such recommendations at this time."

The following is a copy of Memorandum No. 113 from the Office of the Secretary which applies to the leave of temporary employees outside of Washington.

"Paragraph 55 of the Administrative Regulations, effective July 1, 1914, is hereby amended by the addition of the following sentence:

No leave of absence will be allowed temporary employees outside of the City of Washington for the first two months of service; but thereafter leave of absence may be granted to such employees at the rate of one and one-fourth ($1\frac{1}{4}$) days per month, computed from the beginning of the third month.

NOTICE TO FIELD MEN.

In addition to the notice in the last newsletter regarding leave during official travel, two further facts should be noted: (1) When a through ticket is used a ticket with stop-over privilege will not be allowed if it exceeds the cost of through ticket without stop-over privilege. (2) Leave can not be taken where mileage is used if, by reason of breaking the trip, a larger number of coupons are used than would be the case if no stop-over were taken. This would occur when the actual mileage between the initial and terminal points is greater than the agreed mileage between those points.

FIELD NOTES.

VIRGINIA:

Arlington Experiment Farm. Dec. 23. Cold, wet, and cloudy weather has prevailed during the greater part of the past two weeks with a maximum temperature of 44 degrees (Dec. 21) and a minimum temperature of 9 degrees (Dec. 16). The precipitation for this period was 2.07 inches, of which a mere trace occurred in the form of snow on Dec. 11, this being the first snowfall of the season. So far winter grains have apparently escaped injury from cold.

GEORGIA:

State College of Agriculture (Athens) Dec. 18. Rains have been heavy and the cold unusually severe for this section. Winter wheats are in excellent condition. Winter oats are somewhat damaged by cold, and some varieties of winter barley slightly damaged.

LOUISIANA:

Crowley Rice Experiment Station. Dec. 15. The weather has been very cold for this season of the year. The minimum temperature for the past two nights was 25.5 degrees and the maximum yesterday only 38 degrees.

TEXAS:

Texas Substation No. 4 (Beaumont) Dec. 5. The maximum temperature for the week was 71 degrees (Nov. 30) and the minimum 42 degrees on the same date. The total precipitation was 3.99 inches, 2.69 inches of this occurring on December 2.

KANSAS:

Hays Branch Station. Dec. 19. The weather has been very cold for the past week with only a light fall of snow. A minimum temperature of -8 degrees was registered. The total rainfall for the year to date is 6.69 inches below normal.

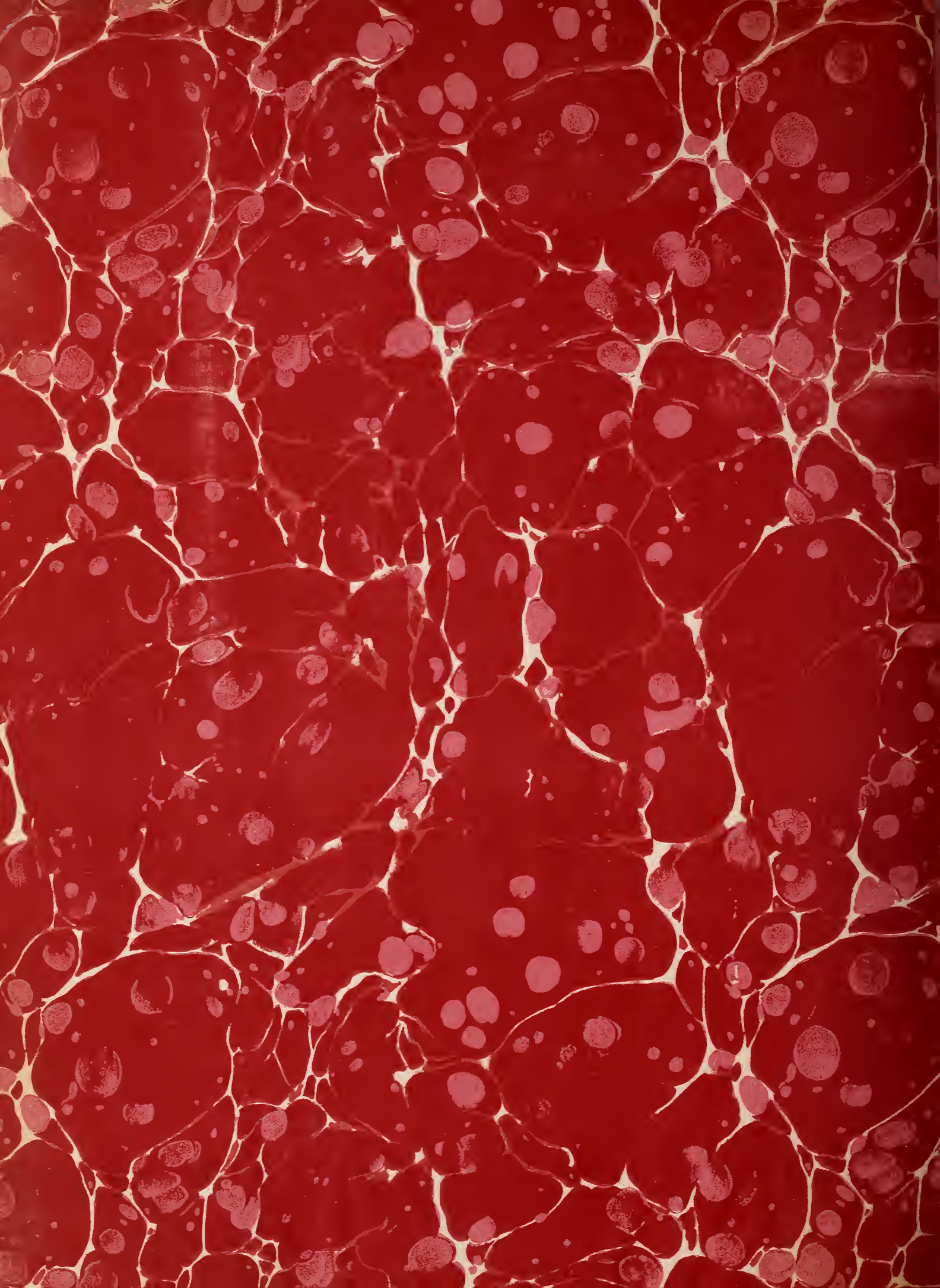
SOUTH DAKOTA:

Highmore Substation. Dec. 7. Winter grains are in excellent shape. They are covered with six inches of snow, which fell while the ground was unfrozen, making it probable that the winter survivals will be excellent. The last of the date-of-seeding tests were sown on Dec. 2, at which time the ground was in excellent condition. A heavy freeze about Nov. 18 and 19, when the thermometer registered from zero on the 18th to -11 degrees on the 19th destroyed all volunteer grains, but the winter grains were not affected in the least. The volunteer spring grains had successfully withstood temperatures as low as 8 degrees above zero.

The snow-fall mentioned above has been general over the State. Fall plowing was successfully done in a large number of localities. Indications are that winter survival of wheat will be the best in some years.

IDAHO:

Aberdeen Substation. Dec. 18. The weather has been cold, the thermometer registering 15 degrees below zero recently.



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